

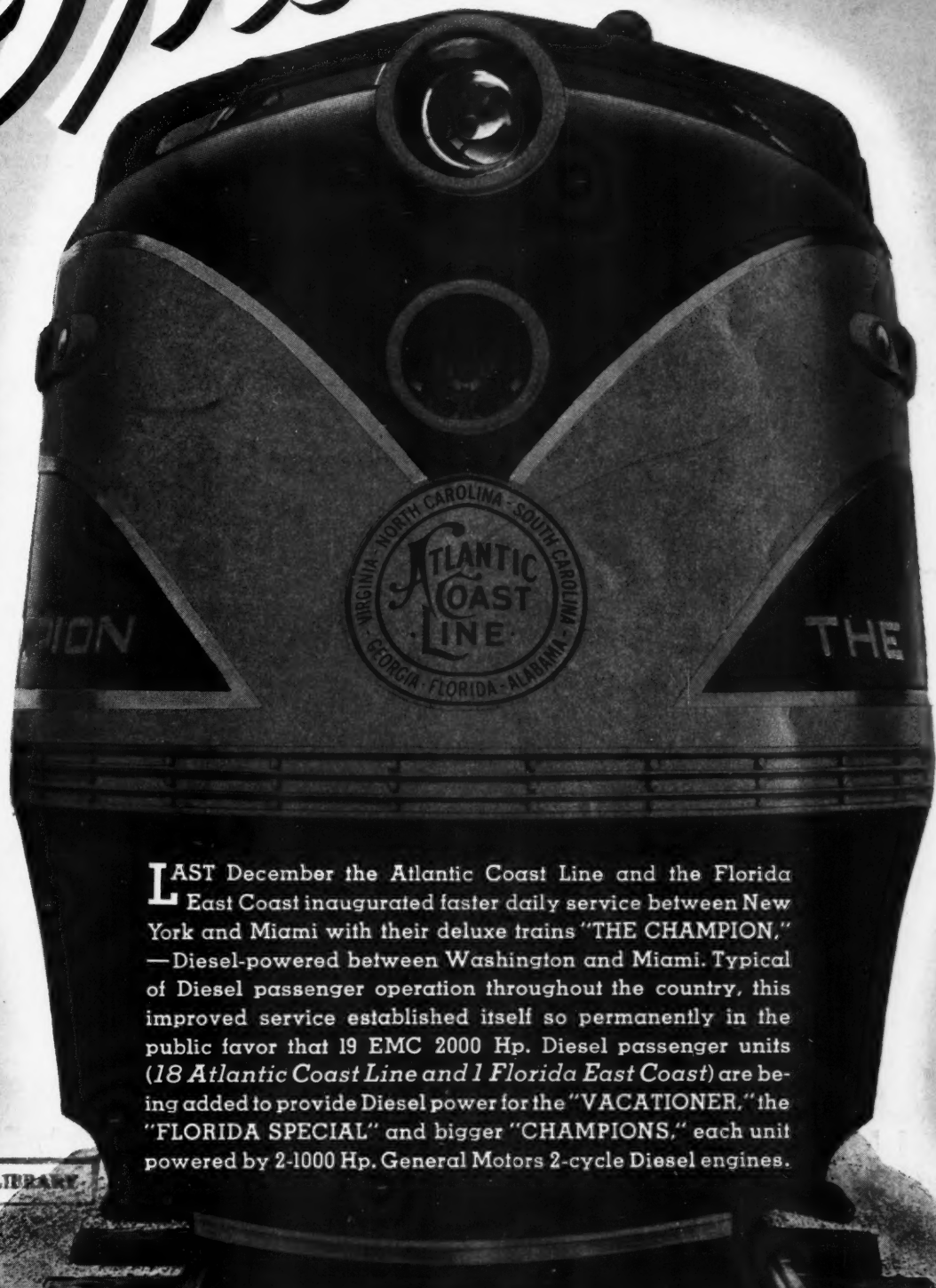
DECEMBER 7, 1940

Railway Age

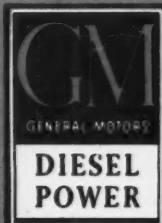
Transportation
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DEC 9 1940

19 More Diesels



LAST December the Atlantic Coast Line and the Florida East Coast inaugurated faster daily service between New York and Miami with their deluxe trains "THE CHAMPION," —Diesel-powered between Washington and Miami. Typical of Diesel passenger operation throughout the country, this improved service established itself so permanently in the public favor that 19 EMC 2000 Hp. Diesel passenger units (18 Atlantic Coast Line and 1 Florida East Coast) are being added to provide Diesel power for the "VACATIONER," the "FLORIDA SPECIAL" and bigger "CHAMPIONS," each unit powered by 2-1000 Hp. General Motors 2-cycle Diesel engines.



ELECTRO-MOTIVE CORPORATION
SUBSIDIARY OF GENERAL MOTORS LA GRANGE, ILLINOIS, U. S. A.

"Buffalo Master"

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Approved by A. A. R. as
an Alternate Standard

The first spring brake shoe key designed and marketed.

In service since 1932 on all classes of railroad equipment.

Safety: This leaf of high carbon steel untempered.
A most necessary feature.

Full bearing on brake
head lugs. See application.

Safety lock: Stops chatter
and vibration at the source.

Operates with lowest
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Full elliptic spring design,
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key necessary to ac-
commodate the permis-
sible tolerance in brake
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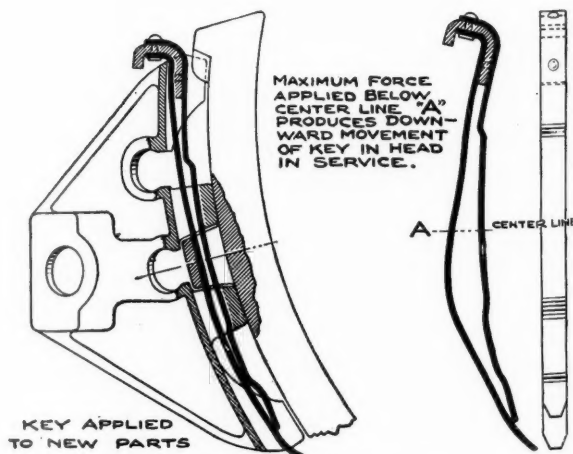
Hooked head permits re-
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Silico-manganese heat
treated leaf, designed to
work downward in service.

A "must" on open top cars.

Master Keys will keep your
cars off the repair track.

Will reduce brake head
wear and broken brake
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140 CEDAR STREET

NEW YORK, N. Y.

RAILWAY AGE

What Every Railroader Ought To Know About Free Enterprise

Most railroad men—officers and employees alike—believe that by doing a good job of railroading they discharge their duty to their country, their industry, and themselves. In an earlier and less critical time, this opinion would have been sound. Today it is not. The system of free enterprise in this country is in the greatest danger it has ever been of being supplanted by socialism; and those who merely do their regular work well, whether railroading or anything else, are not doing their share against socialism, which, demonstrably, would ruin the productive power of the country, and hence threaten the income and the standard of living of all the people—railroad men especially, because the railroads are slated as the first prey of the socializers.

More Important Even Than the Right to Vote— We hear much these days about the necessity of saving **democracy**—meaning, thereby, the people's right to elect public officials—as if that is all that is essential in preserving and promoting the people's welfare. But, it is easily conceivable that the people might vote to substitute socialism for free private enterprise; in fact, most of them have been voting year after year to substitute socialism **piecemeal** for free private enterprise; and the final destruction of free private enterprise would not only be more ruinous to all the people than the destruction of political democracy, but would inevitably involve destruction of the latter.

The people should, therefore, be even more concerned about free private enterprise than about political democracy. But free private enterprise cannot be saved by adherents who see in it nothing more than an arrangement which gives **them** a comfortable living. There are many times more people in this country who have, at least in their own estimation, less income than they need, than there are who are satisfied with what our present economic system allocates to them. Among these people the socializers have for twenty years conducted a subtle, relentless, systematic campaign disparaging free enterprise—a campaign which has won many converts. These are the people among whom free enterprise must win adherents if it is to survive. And yet, thus far, the supporters of free enterprise have done next to nothing (at least, by comparison with the activities of the socializers) to explain free enterprise to those who have reason to doubt its virtues.

Unfaithful Stewards of Free Enterprise.—Even worse, many adherents of free enterprise have not even themselves been true to the principles of the system. Their failure has risen, probably, less frequently from hypocrisy than from ignorance of the principles of the system whose supporters they believe themselves to be. Indeed, many adherents of free enterprise appear to be unaware that the institution they support **is** a system, having rules which must be obeyed if it is to endure. They seem to think it is something wholly natural—like the rising and the setting of the sun. It isn't. Free enterprise is a product of practical morality, self-imposed restraint which goes counter to the urge in men to grasp what they want, by force if necessary. It had its birth in the human mind—pretty largely the mind of one man, Adam Smith. Before Adam Smith's time enterprise had never been free. In his "Wealth of Nations" (1776), he pointed a new way to both freedom and plenty. The western world (and particularly Great Britain and America) followed his prescription; and there ensued the greatest period of economic progress that the world had ever seen, not merely for those at the top of the social scale, but for those in between and at the bottom as well.

Once Smith's prescription for freedom and well-being had passed out of the realm of discussion into that of established institutions, people ceased to think about it and took it for granted. The reader of the truly **liberal** literature of the mid-Victorian era is now profoundly impressed by the fact that such writers as John Stuart Mill, Herbert Spencer and Ralph Waldo Emerson unquestionably assumed that the political and economic freedom which so widely prevailed in their time had not only come to stay where it then existed, but would inevitably spread over the rest of the earth. This actually gave the adherents of political supremacy their opportunity. Adam Smith's doctrine had never been anything but poison to them, because it gave its great rewards to the producers—not to the sterile practitioners of statecraft. Before Smith's time, for centuries, the political power had ruled the lives and fortunes of mankind. Smith put the political men on the side-lines—as referees, linesmen and waterboys. They didn't like it; and, once the real players had forgotten the rules of the game, into the game again came the ref-

erees, the linesmen and the waterboys to spoil its progress, to steal all the glory, and to turn order into chaos.

Adam Smith, the "Forgotten Man."—In all the modern world, except the United States and parts of the British Empire, Adam Smith is the "forgotten man"; and he is almost forgotten even in these countries. His formula for prosperity has been thrown into the ashcan (along with prosperity itself); and the politicians are back in the saddle again where they had ridden so disastrously for a thousand years before Smith's doctrine temporarily dislodged them. As it is written, "The dog is returned to his own vomit again; and the sow that was washed to her wallowing in the mire."

But economic freedom dies hard in America and in the British Empire, where it gained its first and strongest foothold. Here in this country, the system won 22,000,000 votes in the recent presidential election, with an educational campaign of only seven weeks waged in its behalf; and few even of those who voted the other ticket were consciously expressing themselves as opposed to economic freedom. Contrast this with the twenty years or more during which a systematic campaign of attack by Marxists and near-Marxists against economic freedom has been going on—with frantic intensity during the past seven years—and the enormous vitality of the enterprise system becomes at once apparent. Its situation is desperate and the hour is late, but economic freedom can still be saved if those who believe in it will take the trouble to learn what its principles and merits are; will begin being true to those principles; and will explain its merits in terms which can be understood by persons whose economic situation is unsatisfactory.

Free enterprise cannot survive merely because it is favored by the economically-select. It must stand or fall on what it can do for the common man; and upon the common man's understanding of its virtues. It is the job of leadership to point the way to that understanding. It is particularly the job of the kind of men whom private enterprise has called to leadership; because, if socialism comes, the day of such leaders will pass. Stateism and socialism do not give authority to producers—their chieftains are not producers but demagogues and cut-throats, as both Russia and Germany have fully demonstrated.

The Responsibilities of Leadership.—The desperate needs of the time call for knowledge of the enterprise system by all those who hold positions of any responsibility under it; and loyalty to those principles both in action and in word comparable to the loyalty which they bear to their country itself. At a minimum, those who hold positions of responsibility under the enterprise system ought to know deeply, and be able to express clearly and simply, the answers to the following fundamental questions:

What is the enterprise system, and how does it differ from stateism and socialism?

In what important way have the principles of free enterprise been violated in this country, and what have been the consequences of this violation?

How can America be led to return to the application of the principles of free enterprise, as contrasted with further advances toward stateism and socialism?

Volumes could be written in answer to those questions. But we have maintained that responsible leadership should know and be able to express simple answers to them. It is only fair that we should try to practice what we preach. So here goes for a try.

What Is Free Enterprise?

Free enterprise consists simply in leaving to the people themselves the opportunity to make a living in any way they see fit—with no coercion by anyone; and with the state existing simply to keep its members from coercing or robbing or injuring each other; and to protect them from foreign enemies. Under such a system, the government assumes no responsibility for anyone, except those who are rendered helpless through no fault of their own. Any man works at whatever trade or occupation he desires, and what he earns is his (except for a modest contribution in the form of taxes which such a simple government requires for its support). Having earned money by labor or through trade, a man may spend or save it as he sees fit—except that he may not use it in a manner to injure his neighbor. If he elects to save his money, he is entitled to whatever interest he may be able to secure by lending it to those who want to hire it.

Government an Umpire, Not a Manager.—Under such a system, the state owns no property except the small amount needed in the exercise of its limited functions. Factories and all the machines which add to the incomes of the people (by making a little human labor produce a lot of goods) come solely as the result of the people themselves saving and investing the money with which to build these factories and machines. If a man is rich or poor he is so because of his own effort and wisdom or lack thereof. The state neither takes from one nor gives to another.

Markets are free. Prices are not fixed, either by government or by monopolistic private combinations. Rising prices for vegetables and lower prices for wheat indicate that people want more vegetables and less wheat; and the changing prices cause more vegetables to be raised and less wheat.

Free markets are the only democratic system of regulating production which can be devised. When prices are uncontrolled (either by government or private monopoly), a rising demand brings higher prices and hence induces the increased production which the people want. Similarly, falling prices discourage production, saying to the producers: "We, the people, do not want so many of you producing this product."

Let up a little on it, and some of you go to producing those things that we want more."

Now here is the essential contrast between free enterprise and socialism or stateism. With free enterprise and free markets, economic democracy is complete—because everytime a man spends a nickel he casts a vote for what he wants produced and whom he wants to produce and sell it to him. He and his wife cast scores of such votes every day of the week—and each of these is counted and registers its effect in directing the economic system what to produce more of and what to produce less of.

Bureaucracy vs. Freedom.—By contrast, under stateism or socialism, prices and quantities of production are fixed by bureaucrats—who cannot possibly know as much about what the people want as the people themselves know. Probably the bureaucrats don't even care very much what the people want; and if the people don't like what the bureaucrats are producing or are angered by what they are not producing, they get a chance to express their opinion only on election day once in four, or perhaps two, years—instead of 100 times or more a day, as they do under private enterprise. Likely enough under stateism or socialism even on election day the people don't get a chance to vote on economic issues. Instead, they may be demagogued into the view that the election should turn on foreign policy—"in a perilous time like this we need an experienced man"; and so the people go on doing without what they want, and taking the things that the bureaucrats say they ought to have. "We will give you guns instead of butter," said the Nazi chieftains to the German people. "We will give you waterways and concrete highways, and hydro-electric power—even though those who will benefit by these things don't want them enough to pay for them," say the New Deal bureaucrats.

Freedom Cannot Help Making Everybody Better Off.—Free markets and free enterprise make the people as a whole richer than any other system can possibly make them, because these institutions concentrate productive energies on the things the people show they want by buying them and discourage the production of things they similarly show they do not want. Socialism and stateism (with bureaucratic control of production and prices) can only provide the people with what the bureaucrats think the people want; or, to put it differently, what the bureaucrats think the people ought to have.

Since wealth consists in having the things one wants, and poverty consists in not having them, it should be easy to explain even to the youngest schoolboy that stateism and socialism cannot avoid making the people poorer and that free enterprise cannot do otherwise than make them richer. Moreover, free enterprise is complete democracy and complete freedom in the economic realm; while stateism and socialism are unavoidably coercive and dictatorial. It is ludicrous that men

should call themselves democrats or "liberals" (as the New Dealers do) when they favor economic bureaucracy and coercion—the absolute negation of democracy and popular sovereignty in the economic realm.

How Have Free Enterprise Principles Been Violated?

It is clear that America has departed widely from the fundamental principles of free enterprise, as they have been set forth in the above. Adam Smith contended that, if these principles were accepted and put into operation, the wealth of the people would be enormously increased; and actual experience proved that he was right. But, if ever there were a true saying, it is that people cannot stand prosperity. Hardly had economic freedom been well established, and its blessings of plenty begun to flow, that some schemers set about to see how they might modify this freedom to their own selfish advantage.

Protective Tariff Violates Freedom.—The first compromise with freedom was the protective tariff. This device uses the state to hold up all the people for the benefit of the favored few whose product is protected. Momentarily, the scheme works to the advantage of those in the protected industries. Their prices rise, while the prices in the unprotected industries "stay put." But what a government gives to one group, it cannot long refuse to others; and, pretty soon, almost all other prices are protected and they too rise. Then, the relationship of everybody is about what it was before; only that the country is poorer, because it is wasting its efficiency by producing things which it cannot produce cheaply. But there are some industries that produce exportable surpluses (farm products in the U. S. A.) which a tariff cannot protect; and these producers are left trying to buy goods from protected producers, while they enjoy no such protection. They find it difficult to sell their goods abroad, since the foreign countries (because of our high tariffs) find it all but impossible to sell their goods in America.

The Republican party, with its high tariff policy, is largely if not principally to blame for the perennial "farm problem" in this country and thus one of the principal contributors to the rise of the dictators in Europe—the economic crisis in those countries having largely arisen because Continental Europe, unable to sell its goods over prohibitive tariff walls, was also unable to buy abroad the raw materials needed to keep its population from want.

"Natural" and Unnatural Monopolies.—A "natural" monopoly or "natural" partial-monopoly is not a violation of the spirit of free enterprise—since such a monopoly or partial-monopoly arises under competition simply because it is the most efficient method of doing business. By a "natural" monopoly we mean, for example, an electric power company—naturally one

such company to a street can sell power more cheaply than a dozen competing companies in the same street. But, while a natural monopoly is not inimical to the spirit of free enterprise, a monopoly which is the result of a conspiracy is contrary to that spirit. The natural monopoly sells its goods or services more cheaply than competitors could sell theirs; an artificial monopoly fixes prices in excess of those possible under competition. But any kind of monopoly—natural or otherwise—is a potential danger to the continuance of free enterprise; and, hence, the regulation of the prices and the practices of any monopoly by impartial governmental agencies is not only justifiable under the principles of free enterprise; such regulation is quite necessary if relative freedom of enterprise is to persist.

Some hard-shell Republicans have demonstrated how little they know or care about the true principles of free enterprise by their long support of high tariffs (which are stateism pure and simple), combined with their perennial defense of unnatural monopolies in restraint of trade. Both these monstrosities are quite as inimical to free enterprise, to true economic democracy, and to a continued rise in the standard of living as anything invented by Hitler or Stalin. They are, in fact, just another mangy rabbit out of the same hat.

A Test For Fairness of Regulation.—But, while impartial regulation of monopolies and partial monopolies in the public interest is in accord with the principles of free enterprise, regulation which is inequitable, or which goes to restrictive lengths, is a denial of these principles. It is ridiculous, for example, that the scores of railroad companies which are subjected to the severest competition by highways, waterways and the air should be so minutely regulated as to finances, prices and service, while the great automobile manufacturing industry (for instance)—with only half a dozen big concerns—should not in these respects be regulated at all. **A good test for the validity of the regulation of any monopoly or partial-monopoly is the following: Does the regulation enforce conditions which would be present naturally if this industry were truly competitive?** If the answer is "Yes," then the regulation conforms to the principles of free enterprise; if "No," then the regulation in question is inimical to free enterprise, and belongs in Russia or Germany rather than here. If this test were applied to every clause of the Interstate Commerce Act, how much weight would that bulky volume lose?

Labor monopolies (i. e., labor unions) are justified under free enterprise only as an offset to monopolies of employing power. It is not economically legitimate for labor to be monopolized where employing power is not. And certainly there is no justification whatever for regulating industrial monopolies in the public interest while exercising no regulation whatsoever over monopolies of labor. Labor monopolies have escaped regulation in the public interest only because of the fear the politicians have had for the votes at the command of the labor leaders. Reasonable regulation of labor

unions (honest bookkeeping, honest and secret ballots for union officers and on important union policies, for instance) are just as much in the interest of the rank-and-file union member as they are in that of the general public. Certainly there is no justification in any political or economic philosophy for the disgraceful referee system of that Kangaroo Court (adjustment board) in Chicago; or for "make-work" rules of any kind.

One could go on almost indefinitely enumerating violations of the principles of free enterprise of which our country stands convicted. But one or two more outstanding classes of such violations must suffice. Among the most flagrant of any of them is that of the government itself engaging in economic activity in competition with its own citizens; and conducting its business in such a way as to compete inequitably. Of such competition, the most widespread and indefensible is that practiced by government against the railroads.

Denial of Free Enterprise in Transportation.—The highway and waterway systems of this country are economic facilities, just the same as the railroads or housing or manufacturing. Just because these facilities happen to be owned by the government is no reason why they should be considered any differently from economic facilities in private ownership. That is to say, the users of such facilities should pay fees sufficient to cover interest and amortization of capital, maintenance costs and ad valorem taxes, just the same as if these facilities were in private ownership. Any so-called adherent of free enterprise who denies this patent fact (as, of course, many of them do) is really to that extent a socialist.

Punitive taxes on legitimate profits; inquisitorial interference with the issuance of new securities; the whole N. R. A. idea, lock, stock and barrel; the retention of voting power by recipients of government largess (thereby permitting them, as voters, to sit in judgment of their own cause)—these and a host of other such devices are also violations of the principles of free enterprise.

The Return to Freedom

It is certainly a tribute to the hardiness of the spirit of enterprise that it should have survived all these burdens and tortures—but survive it has. A little weak certainly, and weary, but still with enough life left in it to feed and clothe and house 130,000,000 people better than any people before in all history have been fed and sheltered; and enough life to be the mainstay now of the nation in its hour of trial. What could not this great and beneficent giant do for this people if they would but remove from him the political shackles that the Marxists and the demagogues and the short-sighted hard-shell Republicans have put upon him!

When the first unpleasant effect of early departures from the principles of economic freedom (such as high tariffs and combinations in restraint of trade) began to be felt, politically-minded persons immediately pro-

posed to escape these evils—not by removing their causes, but by establishing other devices of monopoly and state-interference to counteract them. Thus, when high tariffs dislocated the economy by bringing high prices in the protected industries, the condition was not attacked (as free enterprise principles would require) by removing the tariffs. Instead, by encouraging or permitting the establishment of labor monopolies, the wage level was brought up to the high-price level of the protected industries. Labor was no better off, relatively, than it had been before—while the politicians had acquired a power of economic life or death over both industry and labor; because they could ruin either by withdrawing political support of their incomes.

Both labor and industry had to go into politics to protect their state-given privileges. And then, along came the farmers, whom the protective tariff could not protect, and said: "Since you are using state power to hold up the prices of industrial products and of industrial labor, you have made it hard for us to buy their products. Moreover, by your refusal to permit the importation of foreign goods, you have cut off the foreign markets for our products. Therefore, in justice to us, you should give us benefit payments out of the federal treasury." And the farmers got their benefits, having given in exchange therefor their right as free men to produce what they will.

How People Have Been Enslaved to Politics.—

Thus has the political power taken freedom away from the people until, even in such still-relatively-free countries as pre-war Britain and America, almost every economic group has become absolutely dependent upon the politicians for the maintenance of a favorable status with reference to other producing groups. The politicians are rapidly getting back where they were before Adam Smith drove them from the market place.

Despite the growing power of the state, though, there still remained—up until the years immediately following the last war—enough freedom in the system to enable it to continue growing. But, at last, the weight of state interference grew too great. The tariffs established in the Harding and Hoover regimes cut off all opportunity for Europe to pay its debts to this country, while still continuing to buy our surplus farm products. The expansion of highways and waterways under the G. O. P. (at the expense of the taxpayers instead of under the enterprise principle of users' paying) undermined confidence in the future of the railways.

The politically-manufactured crash came and the New Deal, instead of removing the causes of the debacle, put the whole economic system in such a restrictive straight-jacket as it had never worn before in this country. The inability of free enterprise to revive under such restrictions has been blamed, not on the state interference which is the real culprit, but on the enterprise system itself and its managers. The state started engaging in economic activities itself, "to provide jobs for those whom private enterprise is unable to employ."

Mr. Willkie saw the cause of our troubles, and the cure for them, more clearly than any other man in public life has seen or expressed them for generations. Unfortunately, these facts are not so simple that people can grasp them in one brief hearing; and Mr. Willkie was not able to reach the understandings of enough people in the short time at his disposal to bring them to apply the **only** remedy which will ever bring an end to the stalemate in our affairs which we have now reached. The evils which have been accumulating for decades cannot be eradicated in weeks, or even in months; years will be necessary.

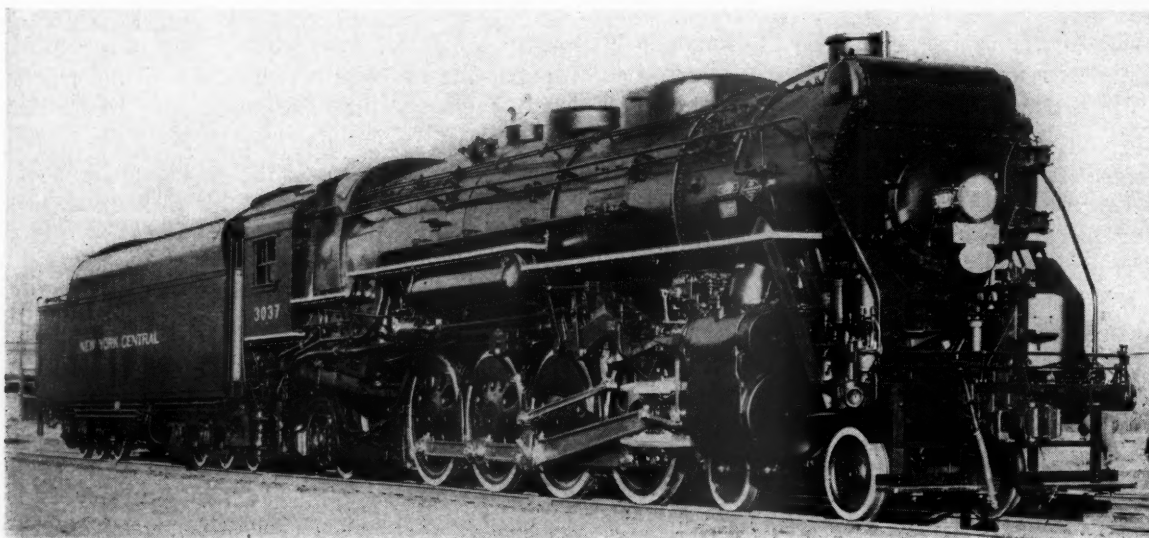
Every pedagogue and pulpit-pounder and politician who is busy expounding the crooked and malicious arguments for more stateism and more socialism will have to be matched by an equally able and equally articulate expounder of the principles of free enterprise. In such a debate, if adherents of free enterprise will really engage in it, they will have the tremendous advantage of having the truth on their side; and the further advantage that they can point to Russia as a perfect example of what socialism, carried to its logical conclusion, inevitably leads to; and to Germany as an equally condign case of the final outcome of stateism.

A Simple Decision Will Turn the Tide.—All that is needed is an act of will on the part of the adherents of private enterprise—a decision to inform themselves in the principles of this system; a decision to be faithful to these principles in their own behavior, even when such fidelity means immediate sacrifice; a decision to expound the knowledge they have gained to all persons who lack it.

Those who wish to pursue the subject further could do no better, as an initial effort, than to read Walter Lippman's "The Good Society" (published in 1937). Do our readers agree that the questions we have discussed herein are proper subjects for the consideration for all leaders in the railroad industry, and by all alert employees? Will they resolve, as an act of patriotism as well as of their duty to their industry, to perfect their comprehension of these questions—and to be faithful to the principles of free enterprise in making the managerial decisions of the railroad industry? Will they, finally, endeavor to make these principles clear to their colleagues and subordinates whenever the opportunity offers to do so?

Our readers' answers to these questions will be most welcome to us—together with their suggestions as to how *Railway Age* may better fulfill the obligations and opportunities of such a publication in a time so critical in the history of our industry, of our country and of our very civilization.

The article in the series discussing the competitive traffic situation, usually found in this space, appears on page 872.



A Lima-Built Freight Locomotive

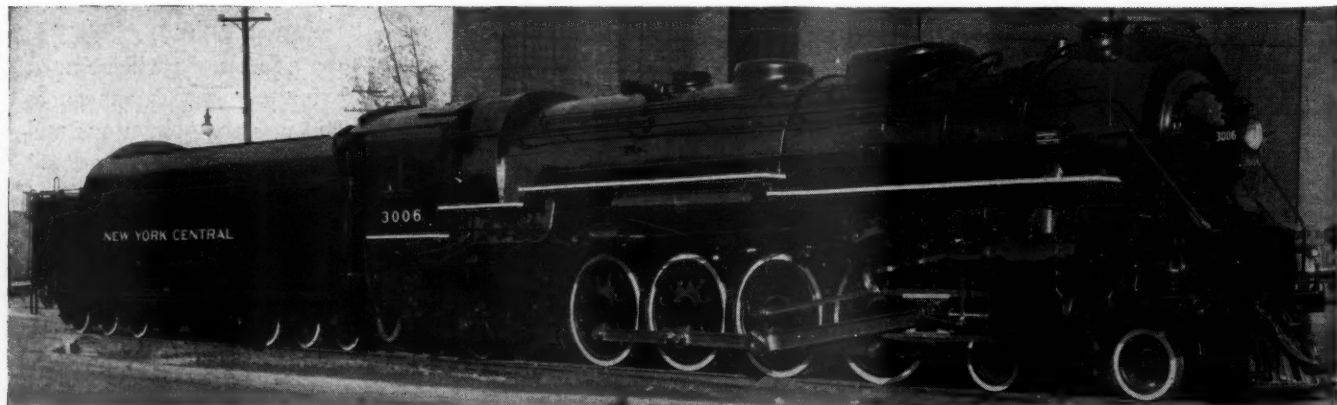
New York Central Buys All-round Road Locomotives

Half of 50 freight locomotives now being delivered are fitted also for main-line passenger service

THE New York Central is now receiving deliveries of 50 locomotives of the 4-8-2 type, designed primarily for freight service. Thirty-five are being built by the American Locomotive Company and 15 by the Lima Locomotive Works. The twenty-five being built by the American Locomotive Company are completely equipped for passenger service and will serve both as passenger and freight locomotives. The remainder of the American locomotives and all of the Lima locomotives are for freight service only.

As a preparation for the design of the new Class L-3 locomotives, two L-2 class freight locomotives were converted some time ago for high-speed operation by the

application of lightweight revolving and reciprocating parts and improved cross-balancing. A number of other changes were also made. These two locomotives were operated through an exhaustive program of rail-stress tests in order to determine the comparative effect on track with the 69-in. drivers of these locomotives and the 79-in. drivers of passenger locomotives at speeds from 60 to 85 m. p. h. The results indicated a performance for the converted locomotives equal to that of the locomotives designed specifically for passenger service and the converted locomotives have since been satisfactorily handling fast and heavy main-line passenger trains. The features first applied in the two converted Class L-2



One of the Locomotives Fitted for Passenger Service—Built By Alco

locomotives have been incorporated in the design of the new Class L-3 locomotives.

One of the outstanding features of the new locomotives is the large tender. Because these locomotives are fitted with water scoops, the water capacity is limited to 15,500 gallons. A coal space for 43 tons, however, has been built into the tanks.

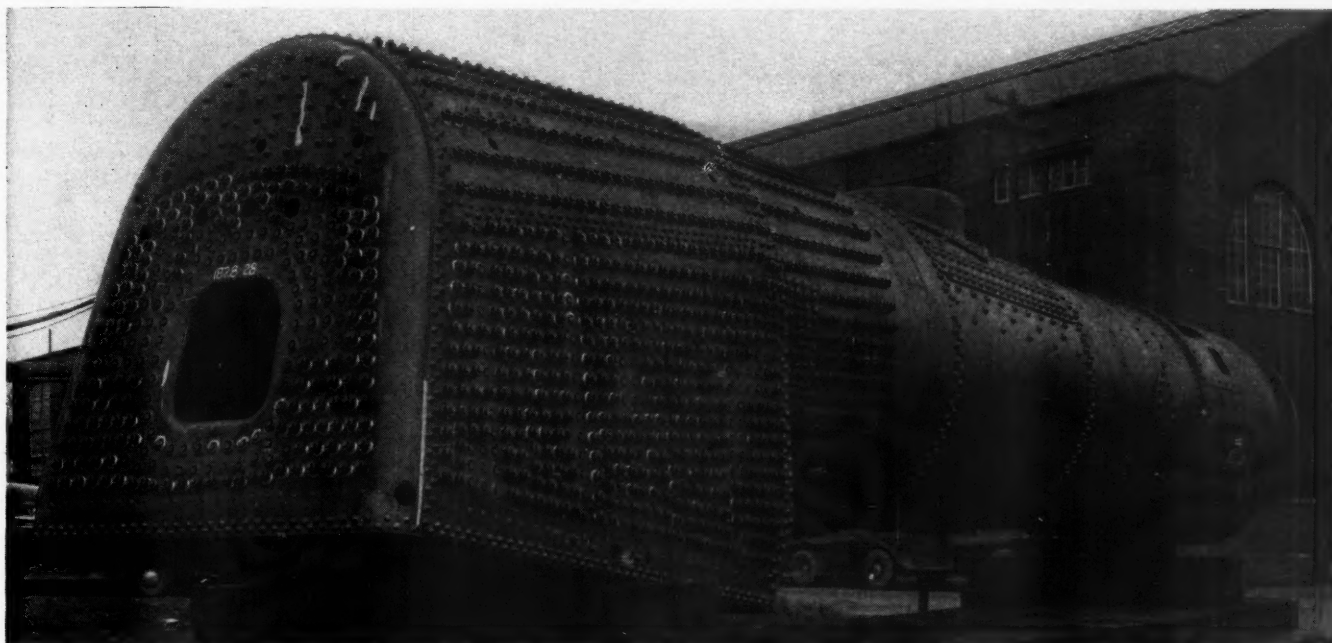
The Boiler

The boiler of the Class L-3 locomotives is of the conical type, 82 $\frac{1}{16}$ in. inside diameter at the first course and 94 in. outside diameter at the largest course. The boilers are designed for a working pressure of 255 lb. and the three 3 $\frac{1}{2}$ -in. safety valves are set to release at

outside firebox seams are seal welded at all four mud-ring corners and the ends of the barrel course longitudinal seams are butt-welded for 12 in. from the ends of the course. In the throat sheet and inside back firebox sheets the five openings for the five 3-in. arch tubes are built up by welding, from sheet thickness to $\frac{3}{4}$ in. and 4 $\frac{1}{2}$ in. diameter, to provide for greater tube bearing in the sheets.

The firebox ring is cast steel, machined at all sheet and cross-tie fits.

All flexible firebox staybolts are the Flannery D Type head, hollow-drilled bolts. The crown stays with UW sleeves and A caps are in seven rows on each side of the shell starting with the fourth row from the top center line and running the full length of the firebox and com-



The Boiler for No. 3027 on Its Way to the Erecting Shop

250, 252, and 254 lb. The boiler is supported on the bed by waist sheets at the guide yoke and between each two pairs of drivers. Expansion shoes are used at the front and rear of the firebox. All boiler sheets are carbon steel and all rivets of soft steel. The principal boiler dimensions are shown in an accompanying table.

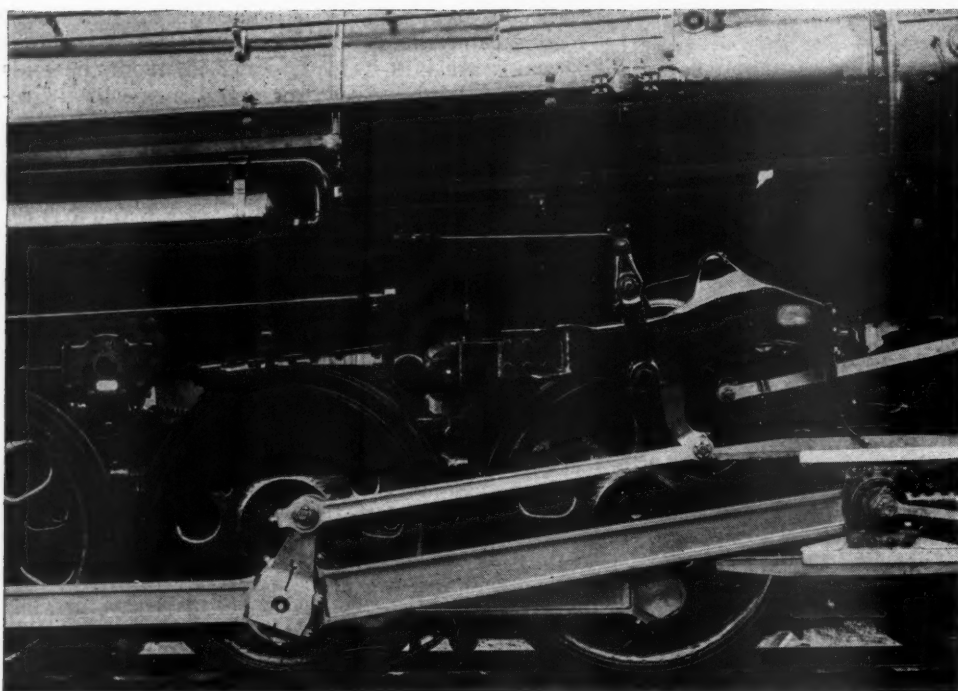
All inside firebox seams are welded. The flues are welded into the back flue sheet after final shop test. The

bustion chamber back of three front rows of expansion stays. These expansion stays are in 10 rows each side of the top center line. There is a complete installation of flexible water-space stays in the combustion chamber, throat, sides and back head except for one row above the mud ring. Where flush-type flexibles are required, the FW sleeves with A caps are used.

There are rigid crown stays in the three rows on each



The Tender Has a Coal Capacity of 43 Tons



The Valve Motion and Running Gear—The Side and Main Rods Are Manganese Vanadium Steel and the Crosshead, Piston and Piston Rod Are Timken Lightweight Design

side of the top center line for the full length of the firebox and combustion chamber, back of the three front rows of expansion stays.

The bituminous coal is fed by a Standard HT stoker and burned on Firebar grates. The brick arch is sup-

ported on five 3-in. tubes. Water is supplied to the locomotives and the 15 built by Lima are equipped with Elesco K5OL heaters.

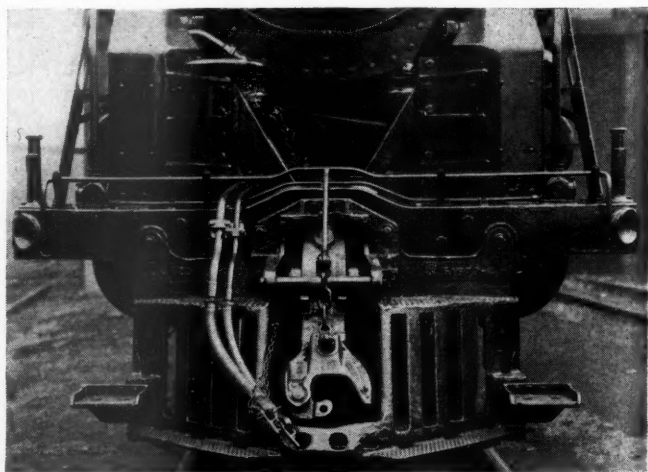
The boilers have Type E, 100-unit, single-loop, superheaters with American throttles integral with the headers. The steam pipes have an inside diameter of 8½ in. Steam dryers are placed in the dome on both the main dry pipe and on the dry pipe leading to the main turret. The latter is located in the roof sheet outside the cab and the valve controls are conveniently arranged, and marked, on a panel over the back head near the cab roof. All auxiliaries, except

General Dimensions and Weights of the New York Central 4-8-2 Type Locomotives

| Class | L-3a | L-3b |
|---|----------------|------------------------|
| Builder | (25) Alco | (10) Alco (15) Lima |
| Type of locomotive | 4-8-2 | 4-8-2 |
| Road numbers | 3000-3024 | 3025-3034 3035-3049 |
| Date built | Dec., 1940 | Dec., 1940 |
| Service | Pass. and frt. | Freight |
| Rated tractive force engine, 85 per cent, lb. | 60,100 | 74,100* |
| Rated tractive force with booster, lb. | | |
| Weights in working order, lb.: | | |
| On drivers | 262,000 | 265,000 |
| On front truck | 70,400 | 65,100 |
| On trailing truck | 56,100 | 63,400 |
| Total engine | 388,500 | 393,500 |
| Tender (two-thirds load) | 302,240 | 303,990 |
| Wheel bases, ft.-in.: | | |
| Driving | 19-0 | |
| Engine total | 43-1 | |
| Engine and tender total | 95-11½ | |
| Driving wheels, diameter outside tires, in. | 69 | |
| Cylinders, number, diameter and stroke, in. | 2-25½ x 30 | |
| Valve gear, type | Baker | |
| Valves, piston type, size, in. | 14 | |
| Maximum travel, in. | 8½ | |
| Boiler: | | |
| Steam pressure, lb. | 250 | |
| Diameter, first ring, inside, in. | 82½ | |
| Firebox length, in. | 120½ | |
| Firebox, width, in. | 94¼ | |
| Combustion chamber length, in. | 63 | |
| Arch tubes, number and diameter, in. | 5-3 | |
| Tubes, number and diameter, in. | 50-2¼ | |
| Flues, number and diameter, in. | 198-3¼ | |
| Length over tube sheets, ft.-in. | 20-6 | |
| Fuel | Bit. coal | |
| Grate area, sq. ft. | 75.3 | |
| Heating surfaces, sq. ft.: | | |
| Firebox and comb. chamber | 373 | |
| Tubes and flues | 4,284 | |
| Evaporative, total | 4,657 | |
| Superheater | 2,080 | |
| Combined evap. and superheater | 6,737 | |
| Tender: | | |
| Water capacity | 15,500 | |
| Fuel capacity, tons | 43 | |

*Booster on freight locomotives only.

ported on five 3-in. tubes. Water is supplied to the boilers by Nathan, Type 1918 B non-lifting injectors on the right side and feedwater heaters on the left. Worthington 5½ SA heaters are applied to the 35 Alco-built



The Front Pilot and Coupler Arrangement on One of the Passenger Locomotives—No. 3022

blowers, operate on saturated steam from this turret. The blowers are supplied with superheated steam from an auxiliary turret near the front end and the blower valves in lines from the turret are controlled from the cab.

Other boiler accessories are shown in the accompanying list of equipment and materials.

The engine bed, supplied by General Steel Castings Corporation, embraces the cylinders and back heads, guide yoke and valve-motion supports, air-pump brackets

and frame cross-members. The right and left main bed members are on 40-in. centers. The beds are all arranged for the application of either roller or friction bearings and the wheel centers are so spaced as to permit the

Comparison of Characteristics of New York Central 4-8-2 Locomotives

| | L-2d Freight Alco | L-2d converted 2998 Alco | L-3a Freight and passenger (25) Alco | L-3b Freight (10) Alco (15) Lima 3025-3034 3035-3049 |
|---|-------------------------|-----------------------------------|---|---|
| Builder..... | | | | |
| Road numbers..... | 2925-2997; 2999 | 2998 | 3000-3024 | |
| Date built..... | Nov., 1929 | Nov., 1929 | Dec., 1940 | |
| Service..... | Freight | Passenger and freight | Passenger and freight | Freight |
| Weight on drivers, in working order, lb..... | 250,000 | 257,000 | 262,000 | 265,000 |
| Total engine weight, in work- ing order, lb..... | 370,150 | 385,100 | 388,500 | 393,500 |
| Weight of tender, in working order, lb..... | 313,500 | 313,500 | 373,900 | |
| Cylinders, diameter and stroke, in..... | 27 x 30 | 25½ x 30 | 25½ x 30 | |
| Driving wheels, diam., in..... | 69 | 69 | 69 | |
| Steam pressure, lb..... | 225 | 250 | 250 | |
| Fuel..... | Bit. coal | Bit. coal | Bit. coal | |
| Grate area, sq. ft..... | 75.3 | 75.3 | 75.3 | |
| Firebox heating surface, total sq. ft..... | 354 | 354 | 373 | |
| Evaporative heating surface, sq. ft..... | 4,556 | 4,556 | 4,657 | |
| Superheating surface, sq. ft..... | 1,931 | 1,931 | 2,080 | |
| Tractive force, engine, lb..... | 60,620 | 60,100 | 60,100 | |
| Tractive force with booster..... | 73,020 | 73,850 | | 74,100* |
| Dynamic augment on main driver at diametral speed, lb..... | 15,400 | 7,950 | 7,950 | |

*Booster on freight locomotives only.

installation of 72-in. drivers, if desired. Should this be done, the height of the locomotive will be increased 1½ in.

The spring rigging is the conventional equalizer and elliptic spring design with reverse-camber driving springs. The hangers, links, and intermediate equalizers are mild steel while the trailer truck and transverse equalizers are normalized carbon vanadium. The springs are carbon steel, with cast-steel saddles.

The driving wheels are the Boxpok type on 40 locomotives and the webspoke type on the other 10. All four pairs of drivers are cross-balanced. The overbalance at Nos. 1 and 4 wheels is 115 lb., 166 lb. at the No. 2, or main wheel, and 132 lb. at the No. 3 wheel. The dynamic augment at diametral speed is 7,950 lb. at the main wheel, 6,350 lb. at No. 3 wheel and 5,500 lb. at the

Nos. 1 and 4 wheels. This compares with the dynamic augment of the L-2d class of 13,900 lb. on the front and back wheels and 15,400 lb. on the main and intermediate drivers.

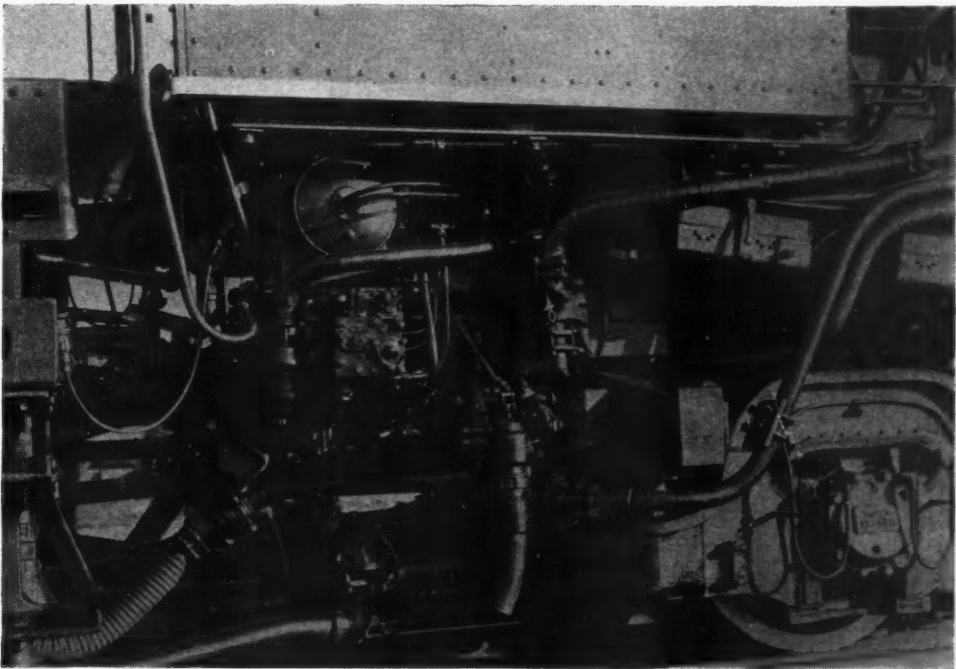
Twenty-five locomotives are equipped with carbon-vanadium driving axles and Timken roller bearings while the other 25 have medium-carbon-steel axles and crown bearings. All driving axles are hollow bored, 4 in. diameter. The journal sizes on the roller-bearing axles are 12⁹/₁₆ in. for the main and 11⁵/₈ in. for the others. On the plain-bearing axles the journals are 12½ in. by 14 in. and 11 in. by 13 in., respectively. Magnus bearings and hub plates and Franklin adjustable wedges and snubbers are used on these locomotives. The Alco lateral-cushioning device is used on No. 1 and 2 wheels. Provision is made for future application on the intermediate or back wheels. The resistances at the front and main wheels where this device is used are 17 and 8 per cent, respectively. The lateral is ½ in. and 5/16 in., respectively.

The engine truck is the General Steel Castings Corporation's constant-resistance type with carbon-vanadium axles and roller bearings—Timken bearings on the passenger locomotives and SKF bearings on the freight locomotives. The trailer truck is the Delta outside-bearing type with Timken bearings mounted on carbon-steel axles. Provision is made for trailer brakes and, on the freight locomotives, for boosters which will be applied by the railroad.

All bushings on the engine trucks and in the engine bed are Ex-Cell-O. The piston, piston-rod and cross-head assemblies were furnished by the Timken Roller Bearing Company. The heads are steel with American Hammered piston rings; the rods are chrome-nickel-molybdenum steel with the Timken grooved fit in the aluminum-alloy-shoe alligator-type crossheads. The wrist pins are case-hardened nickel-chrome steel. King type packing is used on the rods. The passenger power has 3/8-in. head-to-head clearance, front and back, and the freight locomotives ¼ in. at the back and ½ in. at the front. The piston fits are interchangeable on all 50 locomotives.

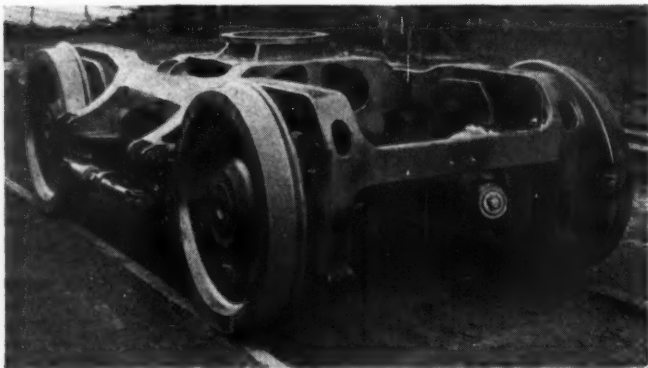
The side and main rods are I-section manganese-vanadium steel, normalized and tempered. Hunt-Spiller gun iron with Magnus bronze bushings are used at the main-pin floating bushings, while the latter bushing mate-

Looking Under the
Right Side of the
Cab



rial is used at all other pins. The main pins are normalized carbon-vanadium steel and the others are carbon

The cab interior is arranged for maximum accessibility to controls. It has a single seat on the right side and two seats on the left side.



The Engine Trucks Are the Conventional Equalizer Type With Elliptic Springs, 8-in. by 10-in. Brake Cylinders, and Roller Bearings

steel, normalized and drawn. All crank pins are hollow bored.

The Baker valve gear is on all 50 locomotives. This gear is controlled by a Barco M-13 reverse gear on the freight locomotives and by a Franklin F-2 Precision gear on the passenger locomotives.

Lubrication

The extent to which mechanical and pressure grease lubrication has been used on these locomotives may be seen by reference to the accompanying table, indicating locations lubricated and the type of lubrication used. The two mechanical lubricators are mounted on the right and left sides of the engine and are actuated by linkage from the top of the combination lever.

The Cab

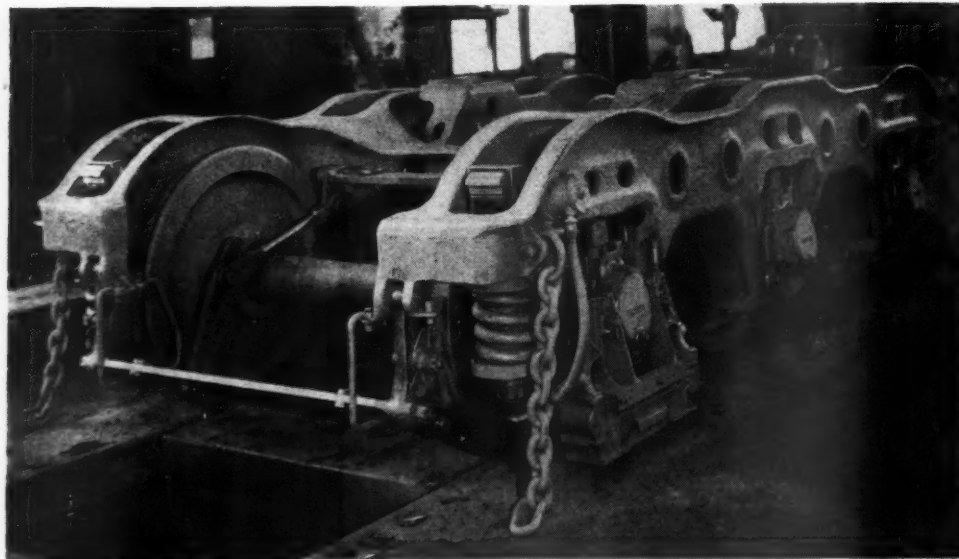
The cab is built of No. 35½ hard, No. 8 gage aluminum with ¾-in. steel rivets and wood lining. Aluminum is also used for angles, tees, bead and trim, gage board, cab-door frame, stationary rear windows and cab-deck side sheets. The deck is diamond-pattern steel plate.

The cab is supported at the rear by a bracket on the bed and at the front by a patented cab saddle which allows for firebox expansion.

Lubrication—New York Central 4-8-2 Type Locomotives

| | L-3b | | |
|---|-----------------------------------|--------------------------------------|------------------------------------|
| | L-3a Alco (3000-3024) | Alco (3025-3034) | Lima (3035-3049) |
| Right-side lubricator-valve oil..... | Nathan DV-5, 26 pts. 7 feeds | Detroit Mod. B, 32 pts. 7 feeds | Detroit Mod. B, 32 pts. 6 feeds |
| No. of feeds: | | | |
| Cylinder and valves..... | 4 | 4 | 4 |
| Air pump..... | 1 | 1 | 1 |
| Stoker..... | 1 | 1 | 1 |
| Feedwater pump..... | 1 | 1 | None |
| Guides..... | None | None | None |
| Left-side lubricator-engine oil..... | Nathan DV-5, 26 pts., 10 feeds | Detroit Mod. B. 32 pts., 14 feeds | |
| No. of feeds and points lubricated: | | | |
| Engine-truck-wheel pedestals..... | 2—8 | | 2—8 |
| Valve-stem guides..... | 1—4 | | 1—4 |
| Main guides..... | 1—2 | | 1—2 |
| Driving-box hub face..... | None | | 2—8 |
| Driving-box pedestals..... | 4—16 | | 4—16 |
| Driving-box wedges..... | None | | 2—8 |
| Trailer-truck pedestals..... | 1—4 | | 1—4 |
| Trailer-truck center pin and radial buffer..... | 1—3 | | 1—3 |
| Total no. of feeds and points lubricated..... | 10—37 | | 14—53 |
| Engine-truck center plate..... | Oil cup | | Oil cup |
| Alemite hard grease fittings: | | No. G-575 | |
| Main and side rods..... | | No. G-575 | |
| Eccentric rod, back end..... | | No. 1267 | |
| Main crank pin..... | | | |
| Alemite soft-grease fitting No. 1396: | | | |
| Valve gear, except valve-stem guides..... | | With | |
| Valve-stem guides..... | | None | |
| Reverse gear..... | | With | |
| Reverse shaft bearings and arms..... | | With | |
| Radial buffer..... | | None | |
| Throttle-rod bearings..... | | With | |
| Speed recorder..... | | With | |
| Waterscoop piston-rod guide..... | | With | |
| Waterscoop shaft bearings..... | | With | |
| Trailer spring hanger pin..... | | With | |
| Reach-rod guide, reverse gear..... | | With | |
| Feedwater pump (Elesco)..... | | None | |
| Lateral-motion device..... | | With—Class L-3a only | |
| Side-rod knuckle pins..... | | With | |
| Tender brake slack adjuster pull rod..... | | With | |
| Rex valve-oil fitting No. 15: Crosshead roller-bearing wrist pin..... | | With | |
| Tender-truck roller-bearing pedestals..... | | With | |
| Throttle cam-shaft packing..... | | Valve oil with separate oil cup | |
| Tender-truck center plate..... | | Oil cup | |

The foundation brake equipment is the American Brake Company design and the operating equipment is



The Tender Trucks Are of the Six-Wheel Type, With Coil and Elliptic Springs, Clasp Brakes and Timken Roller Bearings

the New York Air Brake Company Schedule 8ET with two 8½-in. 120 cu. ft. per min. cross-compound compressors mounted on the bed ahead of the smokebox. The air filters on these compressors have removable cartridges. The engine trucks of the passenger locomotives, Class L-3a, have brakes with cylinders on the truck frames. The passenger power is also equipped with train signal and steam heat.

The main sand box has a capacity of 2,700 lb. Graham-White sanders are used on the drivers of all 50 locomotives and on the trailer wheels of the L-3a locomotives. The driving-wheel sanders are manually operated and the trailer sanders are automatically operated.

The Tender

The tender is a 15,500-gal. riveted tank, with an unusually large coal space, welded to a Commonwealth cast-steel water-bottom frame and supported on two six-wheel trucks. The frame and trucks were supplied by the General Steel Castings Corporation.

The trucks have 41-in. rolled-steel wheels, 6-in. by 12-in. journals, and ASF clasp brakes. The brake system is designed for 100 per cent braking with 50 lb. cylinder pressure based on a light tender weight of 158,600 lb.

The coal space has a capacity of 43 tons and is equipped with a modified Type DA coal pusher. The stoker engine is housed inside the water space on the left side of the tender immediately back of the coal space.

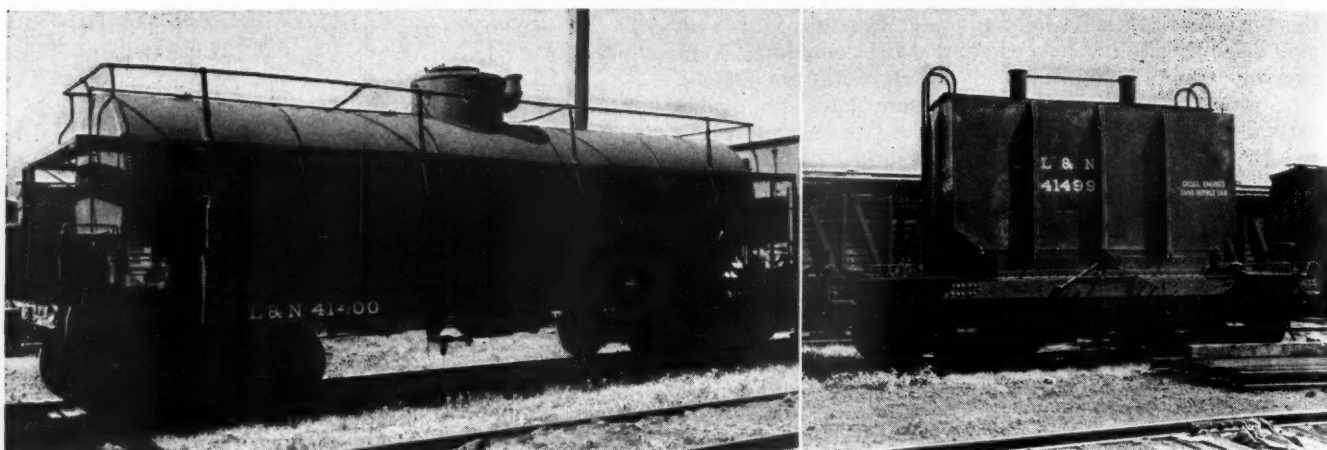
The tenders of all the locomotives have water scoops.

Partial List of Equipment and Materials on the New York Central 4-8-2 Type Locomotives

| | |
|---|--|
| Engine bed; engine and trailer trucks; bumper beams; ash pans | General Steel Castings Corp., Eddystone, Pa. |
| Nickel cast-steel engine-bed pedestal caps; nickel-chromium-molybdenum steel forgings for all reciprocating parts other than main side rods | The International Nickel Company, Inc., New York. |
| Engine-bolt iron | Lockhart Iron & Steel Co., McKees Rock, Pa. |
| Hexagon nuts | (35) Scientific Production Corp., New York. |
| Pilots | (25) General Steel Castings Corp., Eddystone, Pa. |
| Springs | (25) American Locomotive Co., Railway Steel Spring Div., New York. |
| Driving wheels | (25) Crucible Steel Co. of America, New York. |
| Engine-truck and trailer wheels | (40) General Steel Castings Corp., Eddystone, Pa. |
| Tires | (10) Union Steel Castings Div. of Blaw-Knox Co., Albion, Mich. |
| Lateral cushioning devices.. | (25) Carnegie-Illinois Steel Corp., Pittsburgh, Pa. |
| Automatic compensators and snubbers | (25) Armco Railroad Sales Co., Middletown, Ohio. |
| Hot-box alarms | (35) American Locomotive Co., New York. |
| Roller bearings: | (15) Bethlehem Steel Co., Bethlehem, Pa. |
| Driving wheels | (25) American Locomotive Co., New York. |
| Engine truck | (25) Franklin Railway Supply Co., Inc., New York. |
| Trailer wheels | (25) Magnus Metal Div., National Lead Co., New York. |
| Brake equipment | (25) The Timken Roller Bearing Company, Canton, Ohio. |
| Engine-truck brakes | (25) The Timken Roller Bearing Company, Canton, Ohio. |
| Driver brakes | (25) The Timken Roller Bearing Company, Canton, Ohio. |
| Coupler, drop | (25) SKF Industries, Philadelphia, Pa. |
| Uncoupling-shaft brackets... | (50) The Timken Roller Bearing Company, Canton, Ohio. |
| Radial buffer | New York Air Brake Co., New York. |
| Boiler and firebox steel..... | (25) American Brake Shoe & Foundry Co., New York. |
| Firebox steel, deoxidized ... | American Brake Co., St. Louis, Mo. |
| Firebrick | (25) National Malleable and Steel Castings Co., Cleveland, Ohio. |
| | Standard Railway Equipment Co., Chicago. |
| | Franklin Railway Supply Co., Inc., New York. |
| | (25) Bethlehem Steel Co., Bethlehem, Pa. |
| | (25) Otis Steel Co., Cleveland, Ohio. |
| | (35) Lukens Steel Co., Coatesville, Pa. |
| | (25) American Arch Co., Inc., New York. |
| | (25) General Refractories Co., Philadelphia, Pa. |

| | |
|--|--|
| Hot rolled steel sheets | (35) Jones & Laughlin Steel Corp., Pittsburgh, Pa. |
| Boiler studs | Crucible Steel Co. of America, New York. |
| Staybolt iron | Joseph T. Ryerson & Son, Inc., Chicago. |
| Flexible staybolts and sleeves. | Flannery Bolt Co., Bridgeville, Pa. |
| Steel tubes and flues..... | (5) Steel & Tubes, Inc., Cleveland, Ohio. |
| Boiler and cylinder lagging.. | Johns-Manville Sales Corp., New York. |
| Boiler jacket | Carnegie-Illinois Steel Corp., Pittsburgh, Pa. |
| Steam-pipe casing | (35) American Locomotive Co., New York. |
| Superheater | (15) Lima Locomotive Works, Lima, Ohio. |
| Superheater units | The Superheater Company, New York. |
| Throttle | (25) Steel & Tubes, Inc., Cleveland, Ohio. |
| Throttle air-joint packing... | (25) Pittsburgh Steel Co., Pittsburgh, Pa. |
| Steam dryers: | American Throttle Co., New York. |
| Main dry pipe | (35) The Garlock Packing Company, Paimyra, N. Y. |
| Turret dry pipe | The Superheater Company, New York. |
| Smokebox hinges | Dri Steam Valve Sales Corp., New York. |
| Smokebox screen | The Okadee Co., Chicago. |
| Feedwater heater | (35) Wickwire Spencer Steel Co., New York. |
| Feedwater strainers | (15) The W. S. Tyler Co., Cleveland, Ohio. |
| Injector, non-lift; boiler checks, injector type and feedwater heater | (35) Worthington Pump and Machinery Corp., Harrison, N. J. |
| Deck sprinklers | (15) The Superheater Company, New York. |
| Blower valves | The Okadee Company, Chicago. |
| Blow-off cocks | Nathan Manufacturing Co., New York. |
| Blower-pipe elbows | Locomotive Equipment Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn. |
| Washout plugs, arch tube, cylinder port, tank drain and smokebox inspection.. | (25) The Lunkenheimer Company, Cincinnati, Ohio. |
| Continuous blowdown | (25) The Okadee Company, Chicago. |
| Stoker | (25) Wilson Engineering Corp., Chicago. |
| Grates | Barco Manufacturing Co., Chicago. |
| Ash-pan flusher | Huron Mfg. Co., Detroit, Mich. |
| Fire door | National Aluminate Corp., Chicago. |
| Cylinder bushings; piston-valve bushings; valve bull rings; valve-packing-ring castings; outer bushings... | Standard Stoker Co., Inc., New York. |
| Steel bushings | Waugh Equipment Co., New York. |
| Cylinder cocks | The Okadee Company, Chicago. |
| Piston and piston rod | The Standard Locomotive Equipment Co., Toledo, Ohio. |
| Piston-rod and valve-stem packing | Hunt-Spiller Manufacturing Corporation, Boston, Mass. |
| Piston packing rings | Ex-Cell-O Corporation, Detroit, Mich. |
| Manganese vanadium alloy in rods | The Okadee Company, Chicago. |
| Valve gear | The Timken Roller Bearing Company, Canton, Ohio. |
| Crosshead | U. S. Metallic Packing Co., Philadelphia, Pa. |
| Drawbar (safety bar)..... | Koppers Company, American Hammered Piston Ring Div., Baltimore, Md. |
| Top guides, floating..... | Vanadium Corp. of America, New York. |
| Bearing metal-driving-box, rods, and miscellaneous... | Pilliod Co., New York. |
| Reverse gear | The Timken Roller Bearing Company, Canton, Ohio. |
| Reverse-gear flexible connection | Franklin Railway Supply Co., Inc., New York. |
| Aluminum cab, running boards, dome and steam-turret casing | American Locomotive Co., New York. |
| Cab side windshield | The O. M. Edwards Co., Inc., Syracuse, N. Y. |
| Cab side windows | Sponge Rubber Products Co., Derby, Conn. |
| Cab seat box cushions | The Prime Manufacturing Co., Milwaukee, Wis. |
| Clear vision windows | (35) Pittsburgh Plate Glass Co., Pittsburgh, Pa. |
| Shatterproof glass | Lehon Co., Chicago. |
| Cab curtains | Alan Wood Steel Co., Conshohocken, Pa. |
| Cab apron | Ashton Valve Co., Boston, Mass. |
| Air gages | Locomotive Equipment Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn. |
| Steam gages, water-level indicator, safety valves..... | (25) Ohio Injector Co., Wadsworth, Ohio. |
| Miscellaneous cocks and valves | (10) Walworth Company, New York. |
| Water column | (15) Crane Co., Chicago. |
| Water-gage glass | Nathan Manufacturing Co., New York. |
| Water-gage guard | Corning Glass Works, Corning, N. Y. |
| Sander valves and traps..... | The Okadee Company, Chicago. |
| Low-water alarm | Graham-White Sander Corp., Roanoke, Va. |
| Sander hose | Barco Manufacturing Co., Chicago. |
| Train control | (35) United States Rubber Co., New York. |
| Cut-off and speed recorder.. | (15) New York Air Brake Co., New York. |
| Whistle operating equipment. | General Railway Signal Co., Rochester, N. Y. |
| Bell ringer | Valve Pilot Corporation, New York. |
| Bell chain | Viloco Railway Equipment Co., Chicago. |
| Bells | Railway Service and Supply Corp., Indianapolis, Ind. |
| Marker lamps | American Chain Div. of American Chain & Cable Co., Inc., Bridgeport, Conn. |
| | National Bearing Metals Corp., St. Louis, Mo. |
| | (35) Lovell-Dressel Co., Inc., Arlington, N. J. |

(Continued on page 864)



Left—The Mobile Fuel-Oil Unit Is a Converted Tank Car. Right—The Sand Car

Mobile Fuel-Oil and Sand Units Serve Diesel Switchers

Facilities developed for two locomotives on the L. & N. at Louisville are mounted on wheels to permit them to be shifted to other terminals

FUEL-oil and sanding units mounted on wheels to permit them to be moved from one terminal to another if necessary have been developed by the Louisville & Nashville for servicing two Diesel-electric switching locomotives that it recently placed in operation at its East Louisville (Ky.) terminal. Since these locomotives, which were acquired early in 1940, are the first of the oil-burning type to be placed in service by this road, they are regarded somewhat as an experiment and it was thought likely that they might be shifted to other terminals for trial. Hence, it was deemed advisable to provide fueling and sanding facilities that could accompany the locomotives if they were shifted to other terminals.

Although they are located adjacent to each other on the same yard track when in position for use, the fueling and sanding units are entirely separate and function independently. Each unit embodies storage space and also the means for conveying the fuel oil or sand to the locomotives. Briefly, the fuel-oil station consists of a standard tank car fitted with a motor-operated pump and other necessary equipment and attachments, while the sanding unit consists of a hopper mounted on an obsolete tender frame, and utilizes compressed air from the train line to deliver sand to the locomotives. The only requirement necessary in changing the location of these facilities is to provide an electrical connection for the motor-driven pump on the fueling unit.

The Fueling Unit

The tank car that was used as the basis for the fueling unit has a capacity of 6,672 gal. In converting this car for use as a mobile fueling station, a two-inch outlet pipe was inserted in the tank at the "A" end of the car (the end that does not have the hand-brake shaft), to

which was connected the suction line, also two inches in diameter, from a motor-driven centrifugal pump. To prevent sediment or condensation from getting into the outlet pipe, it was placed nine inches above the bottom of the tank. Any foreign matter in the fuel oil settles to the bottom of the tank where it can readily be removed through the standard tank outlet valve during periodical cleanings.

The fuel pump on the tank car, which is a Dayton-Dowd unit with a capacity of 80 gal. per min. against a 25-ft. head, is close-coupled to a 1-hp., single-phase, 110-220-volt motor having a speed of 1,750 r. p. m. Close-coupled to the pump outlet is a 2-in. meter complete with a direct-reading register and an automatic stop valve. The latter valve is so connected to the register that when the quantity of oil that it is desired to deliver, which has been indicated previously on the register, has passed through the meter, the discharge line is closed automatically. A specially-designed cam was installed on the valve handle hinge pin of the automatic stop valve to operate a 30-amp. General Electric limit switch which, in turn, de-energizes a General Electric magnetic switch and thereby cuts out the pump the instant the stop valve closes. This arrangement permits predetermined quantities of fuel oil to be delivered to the locomotives without the constant attention of the attendant, who is then free to manipulate the sanding equipment while the fueling operation is in progress.

Machinery Housing

The pumping unit and meter are mounted on an L-shaped platform, consisting of a ¼-in. steel plate, which is fastened to the "A" end of the car at one corner. One leg of the L is at the end of the car and contains the pump while the other leg lies along the side of

the car and carries the meter and register. The entire assembly is enclosed on the sides and top in a weatherproof housing consisting of $\frac{1}{16}$ -in. steel plates, which are fastened together with stove bolts so that they can be removed readily to give access to the equipment for servicing. The plates forming the outside wall of that leg of the housing on the side of the car are equipped with hinges and serve as a door. Provision is made for locking the door securely when it is not in use. All control switches are located inside the housing.

Electric current is supplied to the pump motor through a flexible oil-resisting, rubber-covered cord which is provided with a weatherproof plug that fits into an outlet receptacle connected to an underground conduit. A wood block, which is placed on timber sills at the ground level, serves as a mounting and guard for the receptacle. The latter is so located as to be directly below the pumping unit when the tank car is spotted in its assigned position for fueling the locomotives.

The oil discharge line from the pump passes through the end wall of that leg of the housing along the side of the car, and thence extends vertically to a horizontal swing joint, clear of the top of the housing, to which is connected a two-inch hose 20 ft. long. This hose is specially-treated, inside and out, for use with oil. When not in use it is fastened to the side of the car in an extended position by means of hangers. The outlet end of the discharge hose is fitted with a tee-head stop cock which is kept closed except when it is connected to the fuel tank in one of the locomotives.

To assure accurate measurement of the quantity of oil handled, the meter is equipped with an air release. As this release sometimes "backfires," causing a quantity of oil to be carried with the air, it was deemed advisable to make provision for returning the oil to the car. This is accomplished by means of a $\frac{3}{4}$ -in. pipe which extends from the air release opening on the meter to the dome of the tank car. All necessary precautions were taken to prevent oil from being spilled about the tank car, thereby avoiding the undesirable conditions that sometimes develop at locations where oil is handled.

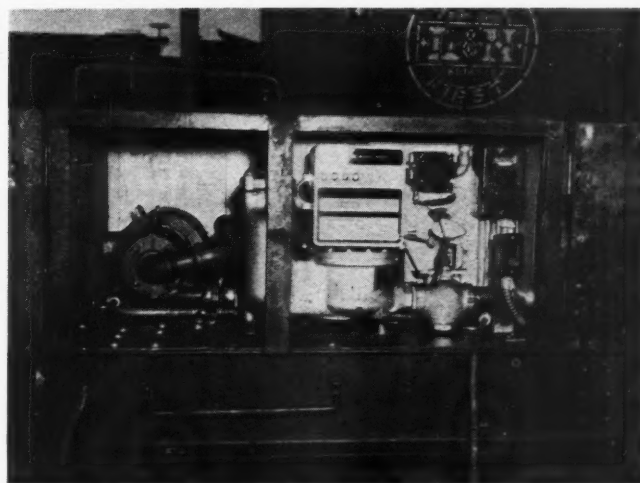
Other Alterations

In designing the fuel car, it was foreseen that it might be necessary to move it in regular freight-train service. Therefore, in transforming the tank car, which was of the older type, into a fueling unit, it was necessary, because of the presence of the pump and other equipment, to rearrange the running boards, hand rails and ladders to conform to the safety regulations of the Interstate Commerce Commission.

The type of fueling equipment represented by the con-

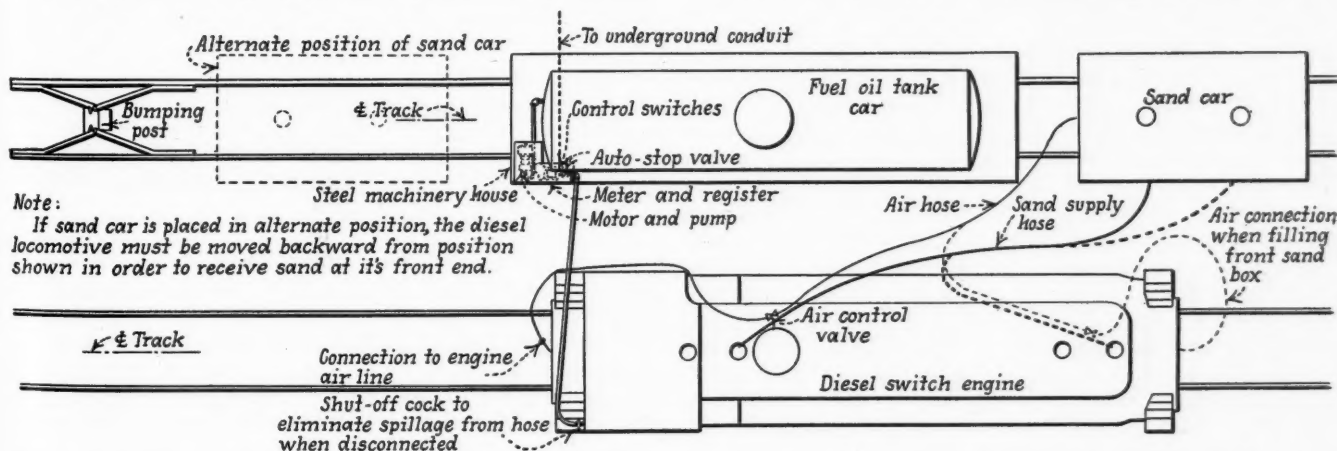
verted tank car is considered by the railroad to have a number of advantages when used for fueling a limited number of Diesel-electric switching locomotives at a terminal where the fuel oil may be secured readily from a refinery or bulk storage plant. For instance, the cost is small when compared with that of a permanent station, while if the fuel demand becomes too great to allow the car to be taken out of service long enough to be moved to the source of supply for replenishment the fueling unit can be dismantled and the tank car assigned to other service. Under present conditions at the Louisville terminals the fuel demand is such that a tank of oil lasts about 30 days. Both of the switchers are serviced on the same days, twice each week, which allows ample time between fuelings for switching the car to a local refinery for replenishing the supply.

The drying and storage facilities for sand for steam



Looking Inside the Machinery Housing of the Fuel-Oil Car, Showing the Motor-Pump Unit and the Control Equipment

locomotives at this terminal are located near the enginehouse at South Louisville, and a considerable movement of the Diesel-electric engines would be involved if it were necessary for them to utilize these facilities. To avoid this movement it was decided to provide a more convenient source of supply of dried sand for these locomotives, preferably a companion unit to the fueling equipment. The demand for sand for the two switchers is comparatively small and it was not considered necessary, therefore, to supply a sand drier for their special use. Since an adequate supply of sand was available at the South Louisville enginehouse, it was



Plan of the Fuel-Oil and Sanding Facilities, Showing the Location of These Units Relative to a Locomotive That Is in Position for Servicing

decided that a mobile storage bin could be provided, which could be taken there periodically for replenishment and returned to East Louisville where compressed air from the switchers could be used for blowing the sand from the bin to the locomotives.

Details of Sanding Unit

Some difficulty was experienced in developing a satisfactory sanding unit but finally there emerged from the shops a steel hopper-bottomed bin, having a capacity of 800 cu. ft., mounted on an obsolete tender frame. To serve as a booster in transferring the sand to the locomotives, an old air tank, 28 in. in diameter and 31½ in. long, was placed below the hopper outlet and welded in position. Sand flows by gravity from the bin into the booster tank and from there it is blown by compressed air through a 1½-in. rubber hose to the sand boxes in the locomotives.

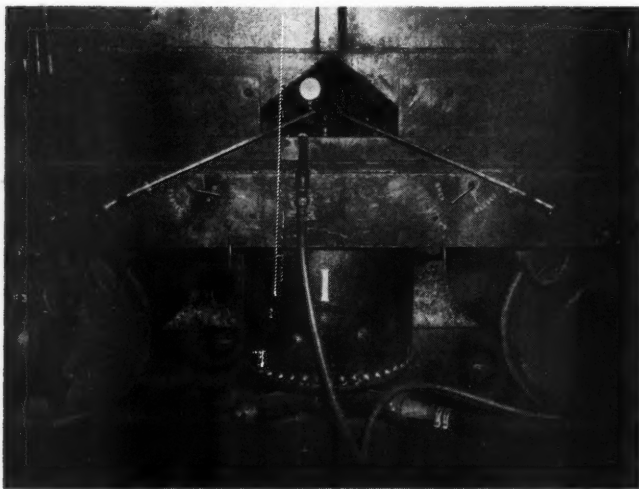
Air for accomplishing this purpose is delivered from the engine line to the booster tank by a ¾-in. hose provided with a suitable reducing unit at its connection with the locomotive coupling. For controlling the flow of

while that of the sand boxes in each of the switchers is about 1 cu. yd. If one of the locomotives should require more than 7 cu. ft. of sand at one time it is necessary to refill the booster tank and repeat the operation for each 7 cu. ft. of sand required. It is estimated that it will be necessary to replenish the supply of dry sand in the bin about twice a year.

The fuel oil and sanding facilities described in this article were designed and built by company forces under the general supervision of G. R. Smiley, chief engineer of the Louisville & Nashville. I. W. Newman, assistant engineer, was in direct charge of the design of the fueling unit, while the sand car was designed and built in the South Louisville shops. The sand booster was developed and installed by L. R. Kroger, general foreman of the South Louisville enginehouse.

New York Central Locomotives

(Continued from page 861)



View of a Portion of the Sand Car, Showing the Booster Tank From Which the Sand Is Carried to Locomotives by Compressed Air

air to the booster tank, a valve is provided in the air hose, which is of sufficient length to permit this valve to be located near the outlet end of the sand hose where the operator is in a position to observe the filling of the sand box. Adequate floor space is provided at each end of the sand car to accommodate the air and sand hose when they are not in use or when the unit is being moved to the enginehouse for a new supply of sand.

Sand is admitted to the booster tank from the bin through a sliding gate. Below this gate there is a steel flap valve faced with rubber, the purpose of which is to prevent any leakage of air from the booster tank into the bin. As sand flows into the booster tank, the flap valve is fouled by particles of sand; hence before the valve can be closed the rubber face must be cleared of the sand. This is accomplished after the sliding gate has been closed by means of air jets coming from a ⅜-in. perforated pipe fastened in the opening between the closed sand gate and the flap valve. This valve is then seated and held in the closed position by means of a lever which is operated and clamped in place from the outside. A pressure of about 30-lb. per sq. in. is required in the booster tank before the sand starts to flow.

The sand capacity of the booster tank is about 7 cu. ft.

| | |
|--|--|
| Headlight generator, electric fittings, cab lamps | Pyle-National Co., Chicago. |
| Steam hose | Quaker City Rubber Co., Philadelphia, Pa. |
| Steam-heat regulator | Vapor Car Heating Co., Inc., Chicago. |
| Copper piping | (25) Phelps Dodge Copper Products Corp., New York. |
| Copper pipe fittings | The Parker Appliance Co., Cleveland, Ohio. |
| Pipe-clamping system | Franklin Railway Supply Co., Inc., New York. |
| Pipe insulation | Union Asbestos & Rubber Co., Chicago. |
| Wrought-iron pipe | (35) A. M. Byers Co., Pittsburgh, Pa. |
| Universal joints | (15) Cohoes Rolling Mill Co., Cohoes, N. Y. |
| Lubricators, mechanical | The Okadee Co., Chicago. |
| Grease fittings | (25) Nathan Manufacturing Co., New York. |
| Oil fittings | (25) Detroit Lubricator Co., Detroit, Mich. |
| Hose for grease connection at air pumps | Alemite Div. Stewart-Warner Corp., Chicago. |
| Oil-resistant hose | Universal Lubricator Systems, Oakmont, Pa. |
| Oil cans | Chicago Pneumatic Tool Co., New York. |
| Valve oil | (35) The Flex-O-Tube Co., Detroit, Mich. |
| Flexible connection between engine and tender and at generator | (25) Johnson Mfg. Co., Urbana, Ill. |
| Paint | (35) Socony Vacuum Oil Co., Inc., New York. |
| Welding wire | Barco Manufacturing Co., Chicago. |
| Torpedoes | (35) E. I. duPont de Nemours & Co., Wilmington, Del. |
| Tender: Frame | (15) The Glidden Co., Cleveland, Ohio. |
| Wheels | The Lincoln Electric Co., Cleveland, Ohio. |
| Truck-box housings (on Alco locomotives) | Magnus Metal Div., National Lead Co., New York. |
| Roller bearings | John A. Roebling's Sons Co., Trenton, N. J. |
| Simplex clasp and body brake | (35) Standard Railway Fusee Corp., Boonton, N. J. |
| Brake shoes | General Steel Castings Corp., Eddystone, Pa. |
| Draft gear | (25) Carnegie-Illinois Steel Corp., Pittsburgh, Pa. |
| Coupler and two-key draft-gear attachment | (25) Armco Railroad Sales Co., Middletown, Ohio. |
| Uncoupling shaft brackets. Tank-filling hole cover lock. | Clark Equipment Co., Buchanan, Mich. |
| Coal pusher | Electric Steel Castings Co., Indianapolis, Ind. |
| Water-level indicator | (25) The Timken Rolling Bearing Co., Canton, Ohio. |
| Waterscoop cylinder relief valves | (25) SKF Industries, Philadelphia, Pa. |
| | American Steel Foundries, Chicago. |
| | American Brake Shoe & Foundry Co., New York. |
| | Waugh Equipment Co., New York. |
| | Symington Gould Corp., Rochester, N. Y. |
| | Union Metal Products Co., Chicago. |
| | Ramapo Ajax Div., American Brake Shoe & Foundry Co., New York. |
| | Standard Stoker Co., Inc., New York. |
| | Locomotive Equipment Div. of Manning, Maxwell & Moore, Inc., Bridgeport, Conn. |
| | New York Air Brake Co., New York. |

FIFTY YEARS CONTINUOUS EMPLOYMENT at one freight station was the record chalked up by R. E. Cotton at the time of his retirement recently as foreman of the freight house of the Delaware, Lackawanna & Western at Elmira, N. Y. He began his service at the freight station in August, 1889, and has been foreman since October, 1907. In honor of his long service Mr. Cotton has received a gold-lettered card pass presented to him by Vice-President G. J. Ray.

Research the Key to R.R. Progress*

Carriers continually study better methods and materials and adapt to r.r. use the discoveries of researchers in other industries

By C. E. Smith

Vice-President, N. Y., N. H. & H.

IN forty years of railroading, there has never been a time when I have not heard railroad men ask the eternal question that stimulates research—"Why not something better?"

On many large railroads, well organized staffs or individuals are found in the executive, traffic, operating, engineering, and accounting departments who devote their entire time to research, and on many railroads there are well-staffed research departments manned by experienced men selected from different departments, familiar with their details, and by graduates of Schools of Business Administration of leading colleges, the latter chosen for their flair for research into and analysis of statistics.

How Railroads Study Economic Problems

These men are particularly interested in research into the economics of railroading, and consider principally changes and improvements in plant and methods to comply with legal requirements in the most economical way in which that can be done, to increase safety of operation in which humanitarianism looms larger than economics and other conditions affecting revenues, expenses and operations generally, including:

Analyses of results of methods and materials used with a view to discovering how results can be improved and costs reduced;

Research into rates and resultant revenues leading to continual revisions in rates to meet competitive conditions, requirements of industry, and to produce the greatest revenues;

Research into the economics of maintenance and operation to get the most and best results at least cost;

Research into public relations, a most important function.

No project or change in operation or rates is undertaken until the desirability and effect have been analyzed thoroughly by appropriate research. Research into economics of railroading is a live and virile activity of which little is heard, but which is quite as important as research into the mechanics of railroading.

Operating and Engineering Research

Many railroads also maintain an organization of trained experts (engineers, metallurgists, chemists) whose entire time is devoted to the investigation, research, and tests of materials, designs and devices which make for improvement in the art of railroading. These men have available well-equipped physical and chemical laboratories and dynamometer cars in which are determined the physical and chemical characteristics of materials and methods in use and available. Studies are continuously under way in connection with the design, development and trials of new materials and devices

and modification of old ones. This work is an important part of the research work of the railroads. The interest of these men is principally in research into the mechanics or engineering aspects of railroading.

Numerous committees of the operating, mechanical, engineering and other departments, are continuously engaged in research into improved methods and materials applicable to individual railroads. The Association of American Railroads is appropriately organized to supervise the most extensive research work for the railroads as a whole. It has five main departments, law, traffic, accounting, operating, research. Each department operates much like an independent association. Each functions through a number of committees, the membership of each of which is composed of supervisory officers of the railroads who are in charge for their respective railroads of the matters considered by the committees of which they are members.

These committees, which have currently hundreds of problems under consideration, decide which problems, of interest to more than one railroad, should be made the subject of research and arrange for it. The American Railway Engineering Association, functioning as the Engineering Division of the Association of American Railroads, has 27 standing committees which meet to arrange for research into the matters in which each committee is concerned, prepare their reports and recommendations, and present and support them at annual conventions. The proceedings of the 1939 convention containing the reports of the results of researches by these Committees are contained in a volume of 800 pages, an up-to-date textbook of matters relating to the fixed property, track, buildings, bridges, yards, shops, water supply, etc.

Similarly the Mechanical Division has sixteen standing Committees which operate in the same way. The annual proceedings of this Division are contained in volumes of about 800 pages each year,—up-to-date textbooks of matters relating to locomotives and cars. Both the Engineering and the Mechanical Divisions co-operate with the American and the Canadian Standards Associations.

Studying Competitive and Military Problems

Research by the Association and individual railroads into inequalities of regulation, taxation and subsidies as applied to competitive means of transportation has resulted in changes in the federal transportation law to apply the same measure of regulation to rail, water and motor carriers. Research continues as to unequal taxation and subsidies. The Association is continually researching into the capacity of the railroads as a military adjunct to the government. In this work the railroads have used and continue to use the best research brains in the solution of their problems, whether they are in the employ of a railroad, manufacturer, college or con-

* Abstract of an address delivered at the A. A. R. annual meeting, New York, November 13.

sultant. If the best results have not been obtained, it is because the skill and brains were not available.

Comparisons are sometimes made between the research practice of the railroads and that of the American Telephone & Telegraph Co., the latter centralized in Bell Telephone Laboratories. The industries are in no way comparable except that both are nationwide. Telephone and telegraph contribute a very small—though vitally important—part of railroading which covers a field as broad as American industry. The centralized financial control, heading up to one company and the limited industrial range covered, makes possible in the telephone and telegraph industry the centralization of research which the separate ownerships, financial control and extensive industrial range covered by the railroads makes impossible or highly impracticable.

Much of the progress made by the railroads has been the result of the individual initiative of forceful and far-seeing officers of certain railroads, which has forced others to follow. The railroads have engaged Bell Telephone Laboratories for research into communication problems for which they were best equipped and staffed, including research into the carrying and tone characteristics of locomotive whistles.

Discarded Materials a Measure of R.R. Progress

As time will not permit a more detailed discussion of research into economics of railroading, this paper will be directed more particularly to that into the Mechanics of Railroading.

No industry has a better right than has the railroad industry to the motto—"Off with the old! On with the new!" That conclusion is evident from the addition of over ten billion dollars in improvements and betterments, discarding of 1,800,000 units of obsolete locomotives and cars and purchasing 1,200,000 new, larger and better locomotives and cars since the rehabilitation of the railroads started in 1923 following the period of federal control, and from the sale of ten billion pounds annually of iron and steel and non-ferrous metal as scrap only partly worn out, mostly superseded by better products—the result of research.

Where is the place of the railroad with respect to research in mechanics of railroading? It is neither a research industry nor a manufacturer, and should not usurp the functions of either. It is a large consumer of whatever is available. Railroads use what is available to the best advantage, specify their needs to manufacturers, and aid them in producing what the railroads need. So much specialized research is needed to produce what the railroads require that certain manufacturers specialize in railroad supplies which has resulted in a large and important railroad supply industry. Its research is so closely tied in with the railroads' that it is impossible to tell where one ends and the other begins. It is mostly co-operative. One can't function without the other.

Many millions of dollars are spent annually by both industries on railroad research. The large research personnel thus working in the interest of railroad improvement is much better equipped, more diversified, and more competent than any research organization the railroads could possibly build up for centralizing research. The cost of the work is paid for by the railroads, partly in direct payroll and other costs, and partly in the price it pays for supplies and equipment. In addition to stimulating research by manufacturers—the producers of the best goods get the orders—the railroads themselves with their own organizations conduct research to determine what types of materials and equipment are best suited to their needs, for safety, dependability, efficiency, comfort, economy, and to building up revenues.

Railroads use practically every commodity and nearly every manufactured article in their operations. The stores list of any large railroad includes over 70,000 separate items, from pins to locomotives, from dirt to diamonds and gold. Every industry, material and process of manufacture is involved. The railroad industry must depend on the:

- Metallurgical industry for metals and alloys;
- Chemical industry for chemicals and chemical products;
- Petroleum industry for oils and other petroleum products;
- Paint industry for paints and other finishes;
- Textile industry for textiles, upholstery, etc.;
- Electrical industry for electrical goods;
- Car and locomotive industry for cars and locomotives;
- Telegraph and telephone industry;
- Food and drug industry;
- Lumber industry;
- Air-conditioning industry;

and so forth through the entire list.

It is not possible for the railroads to conduct all types of research into everything they use, but possible for them to avail of the results of research of others and to profit by research in their own operations. Fundamental or original research is performed by scholars and dreamers who dream great dreams, many of which come true. Production or manufacturing research is conducted by manufacturers who avail of the results of fundamental research and are impelled by railroad demands and by competitive influences to produce better goods. Applied or operating research is conducted by railroads themselves in their maintenance and operations. These researches are performed in the laboratories of colleges, industries, railroads and independent research organizations, in the factories, and on the railroads.

Railroads Study Use—Not Production—of Materials

Railroads have not determined how synthetic rubber may be produced, but will research to indicate the extent to which and how it should be used to the best effect in railroad operations. Railroads have not produced any synthetic paints, but as the result of continuous researches into their best use in railroad operations they are used extensively by the railroads. Seldom are the results of laboratory research applicable directly to railroad operations. Seldom are inventions serviceable directly in railroading operations. Much research must be applied to both in actual operation to make them useful practically.

It is absurd to think that railroad research is something illusive, fantastic, or mysterious, and that its only environment is the laboratory, and its implements the test tube, microscope and guinea pigs. Railroad research is practical indeed. Manufacturers have a hard time keeping up with the demands of railroads for products which railroad research has indicated as desirable and possible. Progress could not have been so rapid in the railroad industry without the co-operative research in actual operations of the railroads and manufacturers in connection with new products. My own railroad, in conservative New England, has been a pioneer in co-operative research with manufacturers into a number of new products, including:

- Electric transmission and operation of rail cars;
- Double-end Diesel lightweight train;
- Diesel-electric switch engine;
- Lightweight deluxe passenger coaches;
- High-speed locomotives;
- Self-propelled passenger cars;

and we are now the only railroad researching into the

adaptability and availability of high-pressure flash boilers in passenger operations.

Research on the New Haven in connection with high-speed steam locomotives, aided by high-speed photography, pointed the way to improvements to correct defects that appeared in early designs. This research was followed by more extensive research along the same lines by the New York Central and the Burlington. A review of all the research problems undertaken and solved by the railroads in the past would result in an encyclopedic volume. A review of the research problems then under way was prepared by the Association of American Railroads in 1933, at the bottom of the depression, and filled 750 printed pages, in two volumes, entitled "The American Railroad in Laboratory," of which copies can be secured from the Association of American Railroads. It is still very timely.

How Track Improvement Came About

The first and earliest research related to track gages and resulted in the present standard that permits nationwide movement of cars and locomotives and joint rates and routes of both passenger and freight for expedition, convenience and economy.

Research for improvement of rails has been a continuing activity. Starting with flat strips spiked to timbers, followed by wrought iron rails too soft for heavy travel, the Bessemer rail was hailed as a great improvement, which it was. But brittle spots inherent in that type of manufacture resulted in rails breaking under trains. Further research developed the open-hearth system and its adaptation to rails. Too soft at first, research continued into various alloy steels and improvement in the manufacture of open-hearth rails.

But breaks continued due to internal fissures, sometimes referred to as rail cancers, which either resulted from the manufacture or the use of the rail. After considerable research by the railroads and manufacturers into the cause and correction of this defect, participated in by Dr. Talbot and Prof. Moore of the University of Illinois, the railroads secured the aid of Dr. Elmer Sperry, of gyroscope fame, for cooperation in devising apparatus to detect the fissures before they became evident on the surface.

The Sperry rail-detector car was devised which when run over rails, spots with unerring accuracy, the points where fissures are developing. Many cars have been built. It is standard practice for railroads to operate them at regular intervals and remove from track those rails which the detector car indicates are developing defects. Further research by railroads and manufacturers has developed "controlled cooling" of rails, which now gives hope that the internal fissures will soon be a defect of the past, the result of research. The railroads and manufacturers have devoted considerable research to determine the most economical length of rail. There is no detail of railroading that has been the subject of so much research as the rail, except the locomotive, which has been the pet of the researcher from an early date.

Railroads were pioneers in research into the application of welding to all conceivable construction and maintenance operations. Car and locomotive maintenance on the present scale and at present costs would be impossible without welding. The same may be said of maintenance of way and structures, methods of which have been so thoroughly mechanized by research into welding and the use of other mechanical processes that present methods constitute a revolution compared with methods of only a few years ago.

The comfort of riding, speed of trains and safety have

all been improved by the application of welding to track. The life of rail has been very materially increased by welding angle bars, welding and heat treating of rail ends, and welding rails of standard length into long continuous stretches without joints—which latter may be considered still in research by the railroads.

The railroads have led, not followed, other industries in their research into the widest possible application of welding in their operations. Others have followed and profited by the research of the railroads. Continuous research has enabled the railroads to render continually improved passenger service at no increase in cost.

Passenger Service Now and That of Pre-War

Comparing passenger service now rendered at a basic rate of 2 cents per mile with a period when it was formerly rendered at 2 cents per mile, we find that passenger cars which then cost \$8,000 each now cost from \$40,000 to \$70,000 each; locomotives which cost then \$15,000 to \$20,000, now cost \$100,000 to \$500,000; wages have more than doubled, from an average of 28.3 cents per hour in 1916 to over 75 cents per hour in 1939, from an average of \$891.61 annual wage in 1916 to \$1,886.59 in 1939; trains are operated at greatly increased speeds with greater safety and with much greater comfort.

In 1916 almost all passenger cars were of wood, poorly lighted and heated, and lacking in convenience and comfort. Continuous research showed how conditions could be improved, resulting in the deluxe all-metal cars, well lighted, temperature and air-controlled in winter and summer, and with more convenience and comforts than most modern homes. The average revenue per passenger mile in 1916 was 2.042 cents and in 1939 was 1.839 cents. The performance of the present quality of passenger service at a lower rate than in 1916, notwithstanding greatly increased costs, is truly a modern miracle, resulting from continual research. Research has had impressive results in increasing the overall speed of passenger trains. In 1920 there were no important trains averaging over 50 miles per hour for the entire run, including stops.

In 1940 there were eight important trains covering 4801 miles of railroad averaging over 60 miles per hour, the average of those eight being 64 miles per hour, twelve important trains covering 13,192 miles of railroad between 55 and 60 miles per hour, average of those twelve trains being 56.9 miles per hour, and nine important trains covering 7,284 miles of railroad between 50 and 55 miles per hour, average 52.2 miles per hour, a total of 29 trains covering 25,277 miles of railroad at an average of 56.7 miles per hour, compared with none over 50 miles per hour in 1920, in which year the 29 fastest trains averaged 35 miles per hour.

In 1920 the Empire State Express and Twentieth Century of the New York Central averaged 48.8 miles per hour and the Broadway Limited of the Pennsylvania 45.5 miles per hour. The Congressional Limited of the Pennsylvania averaged 44.4 miles per hour. The Merchants Limited of the New Haven averaged 44.1 miles per hour. The Panama Limited of the Illinois Central averaged 40.5 miles per hour. All these trains are included in the faster group referred to.

Steam and Diesel passenger locomotives are regularly operated up to 100 miles per hour. And notwithstanding the increased speeds, year after year has passed with few or even no fatalities to passengers in train accidents.

Air-conditioning of passenger cars is the result of research by the railroads to improve the comfort of travel. Cooperative research by railroads and manufac-

turers brought order out of chaos in this improvement, with the result that within a very few years after research had proved air-conditioning of railroad cars practicable, the railroads had air-conditioned over 11,000 passenger cars at a cost of over \$100,000,000—the direct result of railroad research into this feature, and this was done during the very trying years of the present depression.

Air-Conditioning Had Fastest Growth on Roads

Parenthetically, it may be stated that the adoption of this improvement by railroads was more rapid than its adoption by any other industry. Prior to the general air-conditioning of railroad cars, some theatres were equipped, others were nibbling at the improvement, but there had hardly been a start in the air-conditioning of office buildings, hotels, stores, hospitals and homes, to which air-conditioning is readily adaptable and is as economically practicable as to railroad cars and in the application to which the surface has hardly been scratched, notwithstanding the knowledge made available by the railroads' research into and universal adoption of air-conditioning. Many railroad men take pride in the fact that the results of their research into and adoption of air-conditioning has given a fillip to the air-conditioning industry generally.

Streamlining and Higher Speeds

In 1900 tests were made on the B. & O. with the Adams Windsplitter and about the same time the Union Pacific developed and operated the McKeen rail car, the earliest streamlined railroad cars in regular operation. Mechanical research showed practically no operating economy or advantage in streamlining for speeds below 60 miles per hour and but little at higher speeds but further research into the human mind indicated considerable advantage in public relations by extensive streamlining as a concession to popular opinion. Restful to the public eye if not to the railroad locomotive, although possibly a business getter.

Continuous research has resulted in freight trains now being operated as regularly and dependably as passenger trains, as fast as some of the passenger trains and with greatly reduced overall time between shipper and receiver which has revolutionized the practices of industries in having large inventories of materials. In 1920, large freight locomotives of 2,000 hp. could amble along at 30 miles per hour. Today freight locomotives of 4,000 to 5,000 hp. draw heavy trains 60 miles per hour.

Research into fuel consumption has resulted in reduction in coal consumed in freight service from 162 lbs. per 1,000 G.T.M. in 1921 to 112 in 1939, thus reducing the railroads' coal bill \$100,000,000 a year, which has been passed on to the public in lower rates. Present locomotives travel more than twice as far as formerly between coaling and watering. The length of freight and passenger runs has been multiplied several times.

A great deal of research has been conducted with reference to roller bearings, but the economy and desirability of their general use on cars has not been definitely established. They have a very marked advantage when trains are started as their resistance to starting is practically nil compared with considerable resistance of friction bearings. With roller bearings there are no unpleasant jolts in starting trains. But as the speed increases this advantage decreases and disappears at about 45 miles per hour. They may be credited with some simplicity of lubrication. On the other hand their desirability for bearings of the axles of driving wheels of

locomotives seems to have been established quite definitely after much research.

Trains being captive to tracks, the necessity for control and signals was apparent from the start. The staff system, telegraph, telephone, manual block followed as fast as research made them available. Then automatic block, automatic stop or train control systems, and the most modern centralized control of switches and trains remote from the signal operator followed as developed and improved by the cooperative research of the railroads and manufacturers.

The railroads pioneered in progressively improving types of signals leading up to the modern light signals to control movements, the principles of which are now in use in controlling traffic at highway crossings. Also the separation of streams of traffic at different levels at crossings and junctions now followed in design and construction of express highways.

Moving trains must be stopped. In the early days of short trains of light cars, moving at slow speeds, this was a simple matter. Hand brakes were used. As trains became longer, heavier and faster, air brakes were applied. Crude at first, they were improved continuously as research showed the way. Further speeding up in recent years required further research to develop better braking systems. In 1925, the railroads and air brake companies undertook a research program, starting with indoor studies of various types of brakes at the laboratories of Purdue University and later with a test train on the Southern Pacific. A total of about \$5,000,000 was spent by the railroads and air brake manufacturers with the result that better air brakes are now being applied to cars.

The New Haven was one of the earliest railroads to research into application of electricity to railroad traction. As early as 1895 it experimented with both third-rail and trolley operation. In 1904 it made a bold decision to adopt entirely new 11,000 volt single-phase 25-cycle power in the Park Avenue tunnel and refine it by continual research in cooperation with the Westinghouse Electric & Manufacturing Co. The result is a system of heavy electric traction that has been followed by railroads throughout the world including the Pennsylvania's New York-Washington-Harrisburg electrification, the result of continued research.

Transportation of explosives is an important necessity in modern life. Extensive research has been made by railroads into safe transportation not only of materials usually recognized as explosives but also of many materials having explosive qualities, including gasoline and other petroleum products, chlorine and other chemicals—the safe transportation of all of which is important from ordinary business and military standpoints. Railroad research has rendered their transportation practically 100 per cent safe. The story of how this has been accomplished would make an interesting half hour.

The Steam Locomotive a Continual Challenge

The steam locomotive continues to present a stimulating challenge to the researcher. Researches are under way on locomotive brake shoes, spoke versus disc driving wheel centers, wheel tires, axles, roller bearings for driver axles, reciprocating parts of steel alloys and aluminum, counter-balancing of driving wheels with reference to rail stresses, integral cast cylinders and frames, piston rods, crank pins, boilers, boiler plates, welding boilers, feedwater heaters, brick arches in fireboxes, superheaters, gauges, speed recorders, injectors, headlights and reflectors, stokers, mechanical reverse levers, water tube boilers, higher steam pressures, and temperatures, increased speed, longer runs between terminals.

oil burners, boosters, safety valves, insulation, lubricants, springs, heat treatment of tires and wheels, boiler washing, lacquer finishes, fittings, streamlining, standardization, compound and four cylinder and articulated locomotives. Surely you will agree with me that locomotives are full-jewelled with every proven device for better performance.

Quality of coal, firing tests, smoke prevention, mechanical blowers, direct steaming at engine houses, pulverized fuel, cleaning flues and many other problems are constantly under research.

Passenger car research and freight car research present a similar picture. Research into water supply and treatment has resulted in better operating and maintenance results. By having acceptable boiler water, locomotives can make longer runs, suffer less delays, and their cost of maintenance has been materially reduced.

Details of operating research, safety research, medical research, loss and damage research, purchasing and stores research, container and packing research, and further details of mechanical and engineering research could be continued indefinitely, but enough ground has been covered to show that railroads are availing of research to the fullest practicable degree in improving their property, equipment and service.

Famous Researchers Who Made Modern Railroad

Some day some ambitious and appreciative soul will prepare a Roll of Honor of those who have done much research in railroading. Their number is legion. Only a few will be referred to here at the risk of overlooking equally important men. As early as 1896 Dr. W. F. M. Goss made extensive researches to determine atmospheric resistance to railroad cars at different speeds, both on the road and in a wind tunnel. This was before the days of automobiles. The principles he developed for the railroads are sound today and are followed by the automobile and aircraft industries.

Thomas A. Edison started as a telegraph operator. His inventive mind led him from railroading to inventions. We claim him as a railroad man devoted to research which had a profound effect on railroading. George Westinghouse and George M. Pullman worked early and continuously with the railroads in researching into their electric and air brake problems. In signaling, the first American interlocking machine was designed by Mr. Toucey and Mr. Buchanan of the New York Central.

The first electric power interlocking device was developed by Mr. Taylor, telegraph operator of the B. & O. The first conception of automatic train control was advanced by Mr. Voght of the Pennsylvania. The car retarder for use in connection with classifying freight cars in hump yards was devised by Geo. Hanauer of the Indiana Harbor Belt Railway, later president of the Boston & Maine.

Dr. F. E. Turneaure, Dean of Engineering, University of Wisconsin, has conducted researches in his laboratory and on the railroads over a long period of years into bridge design and construction and the effects of the sudden impact of locomotives and trains at different speeds in cooperation with the railroads. Dr. A. N. Talbot, Professor Emeritus, and H. F. Moore, Research Professor of Engineering Materials, in the laboratories of the University of Illinois and on the railroads have conducted research for many years into track construction and stresses in rail and track in cooperation with the railroads. Mention has already been made of Dr. Elmer Sperry and his work on transverse fissure detection.

Dean A. A. Potter has conducted research into many phases of locomotive design and operation, draft gears,

car wheels, brake shoes, air brakes, etc., at Purdue University which built a Locomotive Testing Laboratory in 1891 for cooperative research with the railroads. Locomotive testing laboratories have also been maintained and operated at the University of Illinois and at Altoona Shops of the Pennsylvania Railroad, among others.

Roadway Researchers

Dr. Hermann Von Schrenk, Timber Consultant of St. Louis, has advised many railroads for many years in their research into timber conservation, treatment for preservation, reduction of mechanical damage, and otherwise, which has materially reduced their expenditures for track and bridge ties and bridge and other timbers. And the roll would not be complete without mention of the effective work of the two Dudleys, the New York Central Dudley, and the Pennsylvania Dudley. As early as 1881 Dr. P. H. Dudley of the New York Central was engaged in research into the quality of rail steel, which he continued for many years and including reports on extensive researches into the relation of rails and wheels, fundamental data of use today. Dr. Chas. B. Dudley conducted researches into rails for the Pennsylvania R. R. for many years, in which work he was aided and followed by W. C. Cushing.

Although the work of some of these men was done for the railroads employing them, or in cooperation with committees of railroad men, the results were made available for the benefit of all the railroads.

A Challenge for the Future

Largely as a result of research, railroads are and will continue to be the safest, most adequate, dependable, and economical means of transportation for the mass movement of goods and people. As the result of continuous research, train travel is safe travel.

When better railroad transportation can be performed, American railroads will perform it.

When you hear a suggestion as to how railroad service may be improved, it is a 100 to 1 shot that the suggestion has already been studied—but—pass it on to a railroad executive. He will go into it thoroughly. No industry is more receptive to new ideas.

I'LL TAKE A TRAIN

I do not know why I should like a train
When all my ancestors preferred the sea;
Old paintings of their ships hang on my walls,
But boats and flying spray mean naught to me.
There's something in the swiftness of a train
That satisfies my hunger and unrest,
The everchanging landscape streams away
From sleepy town to purple mountain crest;
My fellow passengers get off and on,
We chat awhile and smile and lightly part,
I love blue dusk, the flash of friendly lights,
The homeward lumbering of a farmer's cart.
People you meet on boats do foolish things,
They fall in love without apparent reason,
They tell their deepest secrets to the world—
The waves go up and down in every season.
All those who like to roll may have the ships
That pitch and toss around in storm and rain;
I like to feel the steady turn of wheels,
An even keel, and so—I'll take a train.

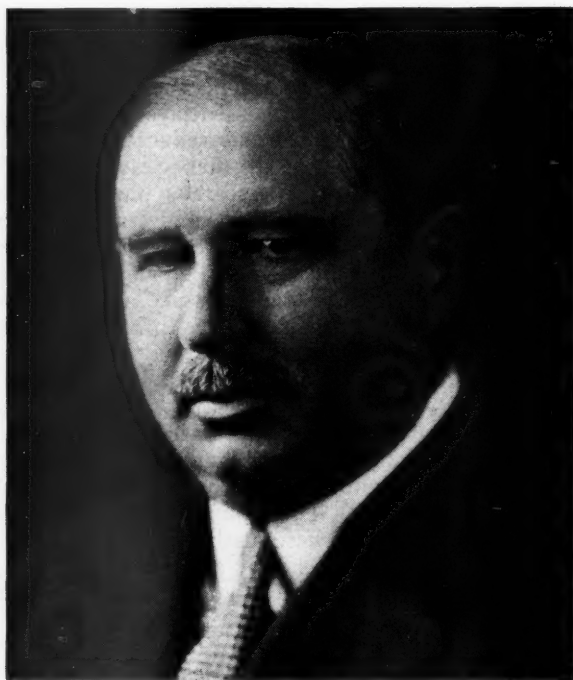
Marj. V. Farnum, in the Chicago Tribune.

White Elected D. L. & W. President

J. M. Davis—president since 1925—named chairman;
change effective January 1



William White



John M. Davis

THE resignation of John Marcus Davis, president of the Delaware, Lackawanna & Western since 1925, has been accepted "with regret" by the board of managers of the road, effective January 1, 1941 (as was announced in last week's *Railway Age*), and William White, vice-president and general manager of the Virginian since May, 1938, has been named his successor. In recognition of his services, Mr. Davis was elected to the re-created office of chairman of the board.

In becoming chairman—a position left vacant since the resignation of the late W. H. Truesdale in November, 1931—Mr. Davis, who was 69 on November 5, will continue to direct the financial activities of the railroad company. The active control of the operation of the properties he will relinquish to a man of 43 years, who will thereby become the youngest Class I railroad president in the country.

The careers of the two men have a number of points in common. Both prepared for business by studying stenography and both started railroad service at the bottom of the ladder as young office workers—Mr. Davis at 18 years of age and Mr. White at 16. Both soon attracted the attention of officers, became their secretaries and thereby—the "business car way"—first got their teeth into the physical operations of railroading. Subsequently they took over operating posts in their own right.

Contrasting, however, are their further experiences, except that both remained primarily operating men. The retiring president jumped from one section of the country to the other in "geographical leaps" in an unusually varied career. From Texas he went to Tampico, Mex-

ico; a year later found him up near the Dominion line on the Great Northern; five years there and he moved to the Erie in the East, then back to the Great Northern, and a few years later out to the Pacific coast. Four years later the Ohio river states claimed him; then the half-southern, half-northern Baltimore. He finally settled down in New York in 1920. Furthermore, he interrupted railroad service twice—once to go into Great Lakes transportation and again to take an important post in machinery manufacture. His successor, on the other hand, has spent his entire career with just two roads and every pay check since his school-days he has drawn from a railroad.

Mr. White comes to the Lackawanna from a very different kind of carrier. The Virginian is a relatively new road, built "all of a piece" shortly before the World War on as high standards as money could buy to do as cheaply as possible the specific job of hauling coal from the rich West Virginian fields to tidewater at Norfolk, Va. It is one of the best earners in the country, has never failed to pay dividends and last year split its stock four ways to bring its price down to a marketable basis.

The D. L. & W., on the other hand, is a combination of some of the oldest roads in the country welded after many years into an integral system (702 mi. of its total of 995 operated are leased) and handles such diverse types of traffic as anthracite coal and metropolitan suburban passengers. Once a wealthy concern, chiefly because of its control of profitable anthracite mines and traffic, "The Road of Anthracite" has had to find new sources of revenues as the hard coal industry has declined. A

road that paid an 85 per cent cash dividend in 1909 on stock selling for \$340 per share, 22½ per cent in 1917, a 100 per cent stock dividend in 1921, and 14 per cent thereafter up to 1929, it has faced in recent years extraordinary truck competition for the short-haul, miscellaneous manufactures traffic which once contributed a large portion of its revenues, diminution in the market for its anthracite plus truck haulage of "bootleg" coal, and a heavy drop in its once profitable non-commuter passenger business.

Its management has fought on the up-grade, inaugurating high-speed freight runs, combining and modernizing facilities which, because the system includes a number of once short independent lines carrying heavy traffic, showed undue duplication. In 1931 the road completed the electrification of its "via Newark" suburban service at a cost of approximately \$16,000,000 to hold and improve its passenger business. Operating revenues, which dropped from \$81,743,000 in 1929 to a low of \$43,339,000 in 1933 climbed back to \$50,454,000 in 1939. This latter improvement has been made without a corresponding increase in operating expenses, which increased only from \$34,777,000 in 1933 to \$38,535,000 in 1939. Anthracite now comprises about 30 per cent of revenues.

William White was born in Midland Park, N. J., on February 3, 1897, and entered railroad service in 1913 at the age of 16, as a clerk in the auditor's office of the Erie at New York. A few months later he became stenographer and clerk in the superintendent's office of the New York, Susquehanna & Western (an affiliated road) at Jersey City, N. J. In March, 1916, Mr. White was advanced to a position in the office of the vice-president of the Erie, becoming his secretary in the following December. During federal control of the railroads he was made secretary to the assistant director of the Eastern region and N. Y. Conference secretary of the U. S. R. A.

From March, 1920, to January, 1923, Mr. White was the office manager of the operating department of the Erie's Ohio region at Youngstown, Ohio. In January, 1923, he was appointed trainmaster at Marion, Ohio, later being transferred to Huntington, Ind. In November, 1926, he was appointed terminal superintendent and in February, 1927, superintendent, of the Mahoning division. In September, 1929, Mr. White became assistant general manager of the Western district, and in June, 1934, became assistant to the vice-president (operation) at Cleveland. In April, 1936, he was appointed

general manager of the Eastern district, at New York. In February, 1938, he left the Erie to become general manager of the Virginian and in May of that year was made vice-president as well, which posts he now holds.

John Davis was born in Anderson County near Palestine, Tex. (now shop headquarters of the International-Great Northern), on November 5, 1871. Following education in public and private schools and business college at Houston, he entered railroad service in 1889 in the transportation department of the San Antonio & Arkansas Pass. Two years later he became stenographer, clerk and car distributor on the Atchison, Topeka & Santa Fe at Temple, Tex. In 1894 he was made secretary to the superintendent of the Mexican Central at Tampico, Mex. He entered the employ of the Great Northern in 1895 as a clerk, later advancing to chief clerk to the general manager. Mr. Davis left railroad service for a short time to go with the Northern Steamship Company at Duluth, Minn., and at Buffalo, N. Y., but returned thereafter to the Great Northern as chief clerk to the assistant general superintendent at St. Paul, Minn. Later he was appointed assistant superintendent at Melrose, Minn., and superintendent at Breckenridge, Minn., and Havre, Mont.

In 1900 Mr. Davis was appointed superintendent of the Erie at Dunmore, Pa., later being transferred to Hornell, N. Y. Returning to the Great Northern in 1903 he became successively superintendent at Superior, Wis., and Minot, N. D., later being promoted to assistant general superintendent of the Central district. In 1906 he was appointed general superintendent of the Harriman Lines, at Salt Lake City, Utah, and in 1910 went to San Francisco, Cal., as general superintendent, Southern Pacific. In 1914 Mr. Davis became general manager of the Baltimore & Ohio Southwestern and the Cincinnati, Hamilton & Dayton at Cincinnati, Ohio, and in 1916, vice-president (maintenance and operation), Baltimore & Ohio at Baltimore, Md. During federal control, in 1918, he was named a member of the general manager's committee and manager of the B. & O. New York terminals. During 1919 and 1920 he was engaged in the making of reports of properties with offices in New York. He left railroad service in 1920 to become president of Manning, Maxwell & Moore, Inc., machinery manufacturers (with a large railroad market), New York. After five years he re-entered the transportation field as president of the Lackawanna on July 1, 1925.

Communications and Books . . .

The Election's Lessons for Free Enterprise's Friends

NEW YORK.

TO THE EDITOR:

Your November 9 editorial comment on the election—and your subsequent observations thereon—have called attention to the extremely significant fact that *the predominant majority of Americans who made their choice on the issue of paternalism vs. free enterprise chose free enterprise*. Unfortunately, too many people voted—not upon this issue—but rather in favor of the government checks they have been receiving; or in favor of altruistic words. The New Deal "loves the common man"; it is the "good neighbor." Many idealistic people felt that to vote against a man who had expressed such lofty sentiments would be practically the same thing as voting against brotherly-love itself.

Unfair to the Ladies

You ascribed such sentimental, and not very realistic, New Deal partisanship primarily to women. I think you do the ladies

an injustice. Sentimentalism is no feminine monopoly—there is plenty of it in people of both sexes whose "thinking" is separated from day-to-day reality—especially among such uplifters as one finds frequently among schoolmarms, social workers and, often, the clergy. Good folks, all of them. But, as Mr. Woodlock keeps reminding us, "the last stage of humanitarianism is homicidal mania." That is, love for one's fellow-creatures, which takes no account of the means by which their lot may actually be improved, leads to disappointed hopes and to quarreling which winds up on a dog-eat-dog level.

A little reflection, it seems to me, makes it clear that an honest formulation of the principles of private enterprise and a resolute and persistent educational campaign in their behalf could, in a relatively short term of years, pull us out of the mess we are in. After all, Willkie would have won by the shift of 2 or 3 million votes—and this in spite of the fact that collectivist propaganda has been going on almost 20 years in this country, with practically no effort whatever to offset it. Free enterprise has kept the adherents it has purely on its intrinsic merits, and despite the fact that all the ballyhoo has been against it.

I don't think most people appreciate the terrific volume of this

Wisdom from Overseas

Too many people who have studied and written upon the competitive aspects of transportation have dealt with it from a short-term or particularistic view. Others have got themselves so buried in a mass of poorly-organized details that they appear to have befuddled themselves as thoroughly as they have their unfortunate readers. In striking contrast to all this is the book by Sir Osborne Mance,* mentioned heretofore in this space. This work does not concern itself with details—but with *principles*, using specific instances only to illustrate and test its analysis. The result is the shortest, and at the same time the most comprehensive, treatise, probably, which has been written on this subject.

A few paragraphs from the book will show how the author puts his finger on fundamentals (the italic side-headings are ours—not the author's):

Growing Cost of Transportation.—"It has been evident for years that the resulting failure to reach a successful solution based on a long-range policy has led to a progressive deterioration of the situation, which can only be rectified at increasing cost to road and rail transport undertakings, to the taxpayer and the user, though certain classes of user may have temporarily benefited."

Government Fearful of Votes of Special Interests.—"The problem is complex, but the main difficulties have lain in the inability of the interests concerned to examine the matter objectively, the general reluctance even to consider measures which might involve a complete or notable departure from long-established practice and, in the background, the hesitation of government where so many voters are concerned."

"The chief difficulty is, however, undoubtedly the effect of road competition on the long-established rate structure, under which the railways carried valuable commodities at high rates and low-grade commodities at low rates, a rate structure upon which the existing industrial regime has been built up."

Requirements of a Competitive Rate Structure.—"If it is decided to abandon the monopoly system with its value rate structure, thereby reducing rates to a cost basis, there will have to be a classification based on the cost of conveying the different kinds of merchandise. Moreover there will be certain traffic which the railways can carry cheaper than the road and can therefore charge for at a higher rate than cost if the traffic will bear it; and there will be certain traffic which cannot afford to pay the full cost of working—including contribution to fixed costs—and which will

therefore be carried at a lower charge than full cost. In this way there would still remain some elements of a value rate structure within the limits in which the railways can retain a monopoly through cheaper cost of working."

Adequate Truck Taxation Alone Is No Solution.—"In the circumstances of today it is evident that adequate taxation of road transport, however important, leaves the fundamental issues untouched."

Why the "Wringer" Is Not the Answer.—"The effect of writing down [i. e., of railway capitalization] is to bring the nominal and market values of the stock into line, and thus enable fresh capital to be issued. It is no good doing this unless the outlook is stabilized with the prospect of increased profits as a result of the new capital expenditure."

Rates Should Attract Shippers to Most Economical Agency.—"Whatever scheme of co-ordination is adopted, the aim should be to establish a condition under which the user by his own free choice will tend to utilize that form of transport which, from the point of view of the community, is most economic."

Get the RIGHT Solution, Whether It Seems Politically Feasible or Not.—"The advent of motor transport inevitably involves a big upheaval in the transport regime of any country, and the changes required to meet the situation may well be of a magnitude which is not easily recognizable, and which will not be generally accepted without some leadership. In the working out of a policy, therefore, it would be wrong to be deterred from following up a promising line of inquiry because of breaking new ground. The first aim should be to decide exactly what is wanted without taking into account what it immediately practical. Once the final objective is clear the means of attaining it, possibly by stages, may well prove easier than appeared at the outset."

A considerable parallel will be noted between these recommendations and those which have been advocated in this space. Britain has gone much further than has the U. S. A. in taxing motor vehicles and fuels adequately, and yet Sir Osborne finds that this action "leaves the fundamental issues untouched." He also sees that reduced railway capitalization will not solve the fundamental problem.

Since a solution, which will leave the railways with plenty of work to do, is deemed possible in the British Isles, where a great part of railway revenue is derived from high-rated and short-haul traffic, it is clear that a similar solution would be doubly effective in the U. S. A. where a much larger proportion of railway traffic is not so highly truck-competitive.

* "The Road and Rail Transport Problem," available in the U. S. A. from Pittman Publishing Corp., 2 West 45th Street, New York.

anti-enterprise propaganda, and how long it has been going on. Ever since the last war, the teachers' colleges, and a big one in New York in particular (which practically dominates the field of secondary education) have been turning out pedagogues eager to "prepare for a new social order." Just what this "order" was to be they have been indefinite about. But their trainees seem to have been softened-up to all so-called "progressive" ideas—such as municipal ownership of electric plants, the infallibility of trade unions, the sanctity of "youth" and "self-expression," the essential malignity of "capital," higher taxes on industry, and unlimited appropriations for all varieties of the uplift. In the view of such persons, the wealth of this country is absolutely unlimited—all that is necessary to produce Utopia is to take away from the "haves" and give to the "have-nots." A whole generation of high school and elementary teachers have now been indoctrinated with this stuff, with psychoanalysis having been largely substituted for religion and all the old copy-book maxims "out the window."

What these teachers' colleges have done to the teachers, and indirectly to many of the younger generation, some of the theological schools have done to a generation of preachers. Clergymen and teachers have plenty of time for propaganda—and what we are reaping now is the result of 20 years of relentless effort by these well-meaning but soft-headed ignoramuses, who have been taken in by Moscow, simply because Moscow's arguments are the only ones they ever heard. When one considers the incalculable mountain of man-hours that have been put in, in the effort to wreck the enterprise system, in comparison with the almost total neglect of *any effort whatever* to explain it to people who do not reach the higher realms of economics in their formal education, it seems to me that the system has shown extraordinary powers of resistance to attack—rather than any fatal weakness.

Then, too, consider the output of books, and articles in the "quality" magazines. The popular book or magazine article which touches on economic questions without slurring the free

enterprise system is the exception rather than the rule—and most of the book reviewers of the so-called "capitalist" press appear to be complacent toward these destroyers, even when they are not actively sympathetic. What is wrong here? Don't friends of free enterprise read books or write them? What are business people doing toward encouraging scholars, publishers and writers whose views are in the American tradition, compared to what is being done by various institutions (whose funds have come from free enterprise) to turn out glib and half-baked "scholars" whose purpose is to tear down our institutions and substitute those of Moscow in their place?

Get Rid of the Hypocrites

Two things need to be done: (1) Private enterprise needs to get together on its own principles (such, for instance, as in the transportation situation); (2) these principles need to be translated into concrete terms so the common man can understand them. It is a little embarrassing to try to sell "free enterprise" to railroad employees, for instance, when they see some of the leading self-proclaimed "free enterprisers" operating barges on toll-free waterways, or carrying on propaganda for superhighways. If government interventionism on behalf of the trucking industry and wealthy automotive and oil interests is sound—then why, on principle, isn't equal interventionism in behalf of farmers and industrial employees similarly sound?

Adherents of free enterprise need to convert or expel the socialists in their own camp. Then, having made an honest and consistent policy possible, they need to translate their program into dollars-and-cents language and take it to the common man. As the November 5 vote showed, the high-brow language of the editorial page doesn't reach the comprehension of enough Americans to win an election. The New Dealers won by taking credit for concrete benefits that the common man could touch—such as federal checks, shorter hours and higher wages. It is time that free enterprise began to claim credit for its vastly greater contributions to the common man's welfare.

L. G. J.

R. R. Salesrooms Not as Modern as Their Trains?

ST. AUGUSTINE, FLA.

TO THE EDITOR:

One of the things that has not sunk down with some of our railroad managers is the fact that this is a selling age. While every man, woman and child knows that we have railroads running—they even see the new streamline trains pass by—but where the managements fail is that they don't take every advantage possible to create a desire for wanting to ride in these modern trains.

For instance, you can take a number of cities and you will find several rail ticket offices located sometimes in the best pedestrian traffic streets. There may be a picture in the window of a new streamline train, and other rail travel information, but you will notice the paint outside of the windows and doors peeling off, sometimes the windows haven't been cleaned in months—a dull, drab-looking display; it's just a railroad city ticket office that has looked that way for the past 20 years.

Why don't passenger departments take a leaf from the movie houses and learn their methods of attracting passers-by to see the show? Every year hundreds of thousands of young men and women become of age, and the chances are they have never seen the inside of a train.

It is surprisingly cheap to have a young, artistic sign painter employed by some of the larger railroads, and just for the purpose of keeping these city ticket offices in tip-top trim. No one can estimate the value that these dressed-up ticket offices are worth. Just look around and notice that other modern business concerns go the limit to modernize or camouflage their business fronts.

I have particularly in mind a rail system that is investing money in about a dozen or more new streamline trains (they finally got sold on that) but, behold, just take a look at their city ticket offices, and you will see they are of the 1920 model.

Of course, I am familiar and know of things that the railroads

have to contend with, but, if the road is investing millions to modernize its transportation facilities, it should certainly want everybody that passes by its place of business (city ticket office) to keep step with that "million dollar look."

While I might succeed in bringing this matter to the attention of the individual road I have in mind, the thing I want to see is all railroads falling in line with modern selling methods.

M. D. B.

New Books...

The Railroad in Literature, by Frank P. Donovan, Jr. 138 pages. 9 in. by 6 in. Bound in paper. Published by the Railway & Locomotive Historical Society, Inc. Price for Members, \$2; for non-members, \$3.

Months of research in the Congressional Library plus a wide reading in the books covered have enabled the author of this exhaustive bibliography to present a really astounding array of references to railroads in American and British novels, short stories, juvenile fiction, poetry, songs, biographies, essays, drama and motion pictures and travel pieces. Under each of the above classifications appears a well-written commentary emphasizing the most significant authors and their works, with short biographies of men who might be classed "the railroad school," like Frank Spearman, Cy Warman and William Wister Haines, followed by separate bibliographies wherein each title is rated for the degree to which it embraces railroad subjects and specially marked to indicate its coverage and character.

In the poetry and song chapters, well-known stanzas are reproduced for handy reference. Again, certain of the bibliographies are sub-divided into books, booklets, articles and even phonograph records. At the end of the book is carried a general bibliography of hand-books and periodicals, followed by a subject-matter index. The whole is well-illustrated with full-page engravings of authors mentioned, and at the beginning there are included a set of ingenious maps of the continents which indicate the locale of the better-known works by attractive pen drawings.

The author, who is connected with the United States Travel Bureau, wrote a brief article on the subject addressed especially to railroad public relations and advertising men which appeared in the *Railway Age* of August 31, page 307. This book is recommended as the logical sequel to Mr. Donovan's article, for those who have sensed in this rich and untapped source of interesting material something which ought to be put to work in behalf of railroads.

Early British Locomotives, by C. F. Dendy Marshall. 108 pages. 10¾ in. by 8½ in. Published by the Locomotive Publishing Company, Ltd., 3, Amen Corner, London, E. C. 4. Bound in paper, \$3; bound in cloth, \$3.75.

Students of the steam locomotive who demand the nth degree of detail and accuracy will welcome this latest addition to Mr. Marshall's large list of historical studies on the subject. This work is in reality an appendix to the first part of an early study titled "Two Essays in Early Locomotive History" (1928), embracing new material which the author has subsequently uncovered in wide correspondence and personal search through the records of locomotive builders in such depositories as ledger books and order records.

The study's greatest value is in its revelation of fresh material about the very earliest locomotives, such as Trevithick's of 1804 and Blenkinsop's of 1812, and the products of such pioneer designers as Swainson, Chapman, Hedley, Brunton and Stewart, predecessors of the better-known George Stephenson. Among an array of rare prints and engravings, the most striking is the earliest published illustration of a railway engine, and elevation and cross-sectional drawings of a Blenkinsop product of 1815.

The casual reader will not like this book, for the author is primarily a diligent searcher among primary sources, and not a facile writer. He has made no effort to present a smoothly connected story, but sets forth in fragments the bare statement of his findings. But the antiquarians will open its pages with the zest of discovery and find that matter-of-fact presentation, utterly free from "padding and window-dressing," which delights such folks.

NEWS

Wheeler & Truman Still Hammer On

This week it is Pennroad which gets laid across the anvil by Senate probers

Alleging that the Pennroad Corporation is a "godchild" of the Pennsylvania, Senators Wheeler and Truman, in a report to the Senate which is part 24 of Report No. 25 from the interstate commerce sub-committee investigating railroad finance, make the charge that circumstances surrounding the formation of the Pennroad Corporation "vividly illustrate the evils which result when financiers and holding company executives are given a 'blank check.'" This report, which is entitled "Pennroad Corporation: Formation and Initial Financing," is the first of a series, which the subcommittee has in preparation, which will discuss the history of Pennroad.

After asserting that the corporation was "brought to birth by the Pennsylvania's officers and directors, acting with the advice and cooperation of the railroad's bankers, Kuhn, Loeb & Co., during the stock market 'mania' of 1929" and that "its ill effects can still be felt," the report goes on to say that Pennsylvania officials as early as 1924 resolved to spend large sums for the purchase of stock in other eastern railroads. Purchases, it continues, were first made through the Pennsylvania Company, but by 1929, a new corporation was needed for carrying on these stock purchases—"partly to avoid Interstate Commerce Commission scrutiny, partly to avoid running afoul of the anti-trust laws, and partly because market conditions were ripe for raising large sums from the public."

"Some \$87,000,000 was raised from the public through Pennroad's first stock issue. Before this stock was ever sold, \$36,000,000 of the proceeds had already been earmarked for purchasing Detroit, Toledo & Ironton securities from the Ford interests, and other railroad stock purchases were under consideration. But investors were not informed that their money was to be used in this way. They were asked to give the new corporation a 'blank check.' Indeed, when one newspaper hinted that funds invested in Pennroad would be used to buy railroad stocks, a public relations counsellor for the Pennsylvania Railroad insisted instead that the money would be spent on 'air lines, bus lines, container lines,' etc. In spite of this and similar denials, some 97 per cent of the public's investment in Pennroad went into railroad securities; not a penny went into air lines, bus lines, or container lines."

Disputing the statement that Pennroad

was frequently described as an "independent instrumentality," the report charges that in reality its officers, directors, voting trustees, and even employees were chosen from the personnel of the railroad. Thus, it goes on, the railroad company was in a position to dominate the supposedly independent Pennroad Corporation.

"To ensure that domination," the report declares, "investors in Pennroad were deprived of all voice in the affairs of their corporation. The actual stock was placed in a 10-year trust, and three voting trustees—all Pennsylvania Railroad men—were given for a 10-year period the full powers over the corporation which are normally wielded by stockholders."

Asserting that Kuhn, Loeb & Co. did not underwrite the first Pennroad stock issue, but instead committed themselves to purchase under certain conditions about \$3,750,000 of that stock, the report states that in return for taking this "minimal risk" Kuhn, Loeb & Co. and associated bankers profited to the extent of more than \$1,950,000—more than 50 per cent of the amount risked.

"In addition," it is pointed out, "Kuhn, Loeb & Co. were given options to purchase 500,000 shares of Pennroad stock, in return for their 'advice.' This 'advice' consisted in advising against having the issue underwritten, advising to sell stocks instead of bonds, and advising to establish the voting trust which sterilized investors' power over their investment. For this advice, all given during a one-month period, Kuhn, Loeb & Co. received additional options, which netted the firm about \$2,700,000."

"Others were also placed in a position to profit without risk during the formation of Pennroad Corporation," concludes the report. "At a time when Pennroad certificates were being traded in at \$20 or even more, a 'special list' was drawn up of persons to whom the stock would be offered at \$15. Nominations to this list were made by Pennsylvania Railroad directors, and many on the list were persons in a position to influence shipping over the Pennsylvania Railroad and competing lines. Thus from its very inception, Pennroad Corporation was used to further the interests of the railroad as against those of its own investors."

Wood-Preservers' Convention

The American Wood-Preservers' Association will hold its 37th annual meeting at the Brown Hotel, Louisville, Ky., on February 4-6. As heretofore, the session on Wednesday forenoon will be known as the "Users Day" session and will include addresses on the treatment of timber for a variety of railway uses by officers of those railways.

Refuses to Void Anti-Trust Suit

Judge sides with "Buster" Arnold in continuing Sherman Law case against A. A. R.

Declaring that he did not think that the questions in controversy in the case are moot, Justice Jennings Bailey of the District Court of the United States for the District of Columbia has refused to dismiss the government's anti-trust action against the Association of American Railroads, its members and officers. The case, which was filed by the Department of Justice on October 25, 1939, and reviewed in the *Railway Age* of October 28, 1939, page 670, was instituted under provisions of the Sherman Act and charged that the railroads had violated the law by refusing to enter into through routes and joint rates with motor carriers. This was accomplished, it was alleged, by the passage of certain resolutions by the board of directors of the A. A. R. and agreement thereto by the member roads, thus constituting a conspiracy in restraint of trade.

The railroads had contended that the rescinding of the resolutions in question had rendered the case moot and asked Justice Bailey to enter an order dismissing it, citing the negotiations between the A. A. R. and the Department of Justice in support of the contention that the Department of Justice had agreed to ask for a dismissal of the case if the resolutions were rescinded. In oral argument on the motion of the A. A. R., Frank Coleman, special assistant to the Attorney General, emphasized the fact that the government was interested only in the question of whether or not the railroads actually intended to enter into through routes and joint rates with motor carriers and told the court that the conspiracy might still exist secretly even though there were no written evidence of it. He suggested several forms of action that the court might take, details of which were given in the *Railway Age* of November 23, page 804, but asked that the anti-trust suit be not dismissed.

After briefly setting out the history of the case, Justice Bailey pointed out that it was apparently the understanding at the time of the abovementioned negotiations that when the resolutions had been rescinded, the government would move to dismiss the suit. "However," said Justice Bailey, "the Assistant Attorney General in charge of the suit did not concur in the view that the case should be dismissed and refused to do so."

"I think," wrote Justice Bailey in dis-

cussing his decision, "that this case is governed by the principles laid down by the Supreme Court in *U. S. v. Trans-Missouri Freight Association*, 166 U. S. 290. In that case the Government attacked the validity of an agreement by certain railroads to form themselves into an association and through it to agree upon rates and charges. After the decision of the trial court, the defendants moved before the Supreme Court to dismiss the appeal (by the Government) upon the ground that the association had been dissolved and the agreements abandoned. This motion was overruled, the Court stating:

'The judgment of the court is sought upon the question of the legality of the agreement itself for the carrying out of which the association was formed, and if such agreement be declared to be illegal, the court is asked not only to dissolve the association named in the bill, but that the defendants should be enjoined for the future.'

"The Court further said:

'If the injunction were limited to the prevention of any action by the defendants upon the particular agreements set out, or if the judgment were to be limited to the dissolution of the association mentioned in the bill, the relief obtained would be totally inadequate to the necessities of the occasion, provided an agreement of that nature were determined to be illegal. The injunction should go further, and enjoin the defendants from entering into or acting under any similar agreement in the future. In other words, the relief granted should be adequate to the occasion.'

Justice Bailey concludes his decision by saying that the chief case apparently relied upon by the defendants (*A. A. R.*) is *U. S. v. United States Steel Corporation*, 251 U. S. 417, "but it appears that when the Supreme Court discussed that case, the acts complained of had ceased some nine years before, and nine months before the suit was brought."

The next step in the controversy will be for the railroads to answer the original complaint of the government within 20 days. It has been learned at the offices of the *A. A. R.* that such an answer will be filed with the court within that allotted time.

Interviewed after Justice Bailey's decision, Mr. Coleman said that the government "is gratified that the decision is so clear-cut and will establish a precedent for similar anti-trust actions in the future." He explained that as a result of this decision defendants will not be able to come into court and demand a dismissal of an anti-trust suit because of the fact that the action that has been complained of has ceased.

He pointed out that after the railroads have answered the suit an agreement will probably be reached as to a date for trial. He further explained that under the new rules of civil procedure much, if not most, of the testimony would probably be taken by deposition, thus obviating lengthy and costly court hearings. Moreover, it is entirely possible that the case may never come to trial, since an agreement resulting in a consent decree may be reached by the parties.

10 Months N. O. I. Was \$527,102,152

Class I railroads of the United States in the first 10 months of 1940 had a net railway operating income of \$527,102,152 which was at the annual rate of return of 2.38 per cent on their property investment, according to the Bureau of Railway Economics of the Association of American Railroads.

In the first 10 months of 1939, their net was \$457,433,164 or 2.07 per cent, and in the first 10 months of 1930, it was \$759,-

1939, but a decrease of 24.6 per cent under the first 10 months of 1930.

The September net in the Eastern district was \$39,233,989 compared with \$53,391,967 in October, 1939, and \$47,274,716 in October, 1930.

In the Southern district the net for the 10 months was \$60,360,532 or 2.30 per cent; for the same period in 1939 it amounted to \$62,824,411 or 2.41 per cent, and for the same period in 1930 it was \$73,164,143, or 2.63 per cent on investment. Gross in the Southern district for the 10 months amounted to \$445,818,391, an in-

CLASS I RAILROADS—UNITED STATES

| | Month of October | | |
|---|------------------|---------------|---------------|
| | 1940 | 1939 | 1930 |
| Total operating revenues | \$413,589,928 | \$419,717,399 | \$477,966,434 |
| Total operating expenses | 276,716,625 | 271,538,049 | 322,443,081 |
| Taxes | 38,892,597 | 34,981,962 | 31,791,258 |
| Net railway operating income | 86,988,444 | 101,716,356 | 110,923,349 |
| Operating ratio—per cent | 66.91 | 64.70 | 67.46 |
| Rate of return on property investment | 2.51 | 2.94 | 3.35 |

| | Ten Months Ended October 31 | | |
|---|-----------------------------|-----------------|-----------------|
| Total operating revenues | \$3,539,445,104 | \$3,281,797,253 | \$4,512,318,485 |
| Total operating expenses | 2,563,885,227 | 2,413,032,871 | 3,340,656,001 |
| Taxes | 340,659,809 | 300,952,055 | 303,226,866 |
| Net railway operating income | 527,102,152 | 457,433,164 | 759,038,636 |
| Operating ratio—per cent | 72.44 | 73.53 | 74.03 |
| Rate of return on property investment | 2.38 | 2.07 | 3.43 |

038,636 or 3.43 per cent. The October net was \$86,988,444 or 2.51 per cent, compared with \$101,716,356 or 2.94 per cent in October, 1939, and \$110,923,349 or 3.35 per cent in October, 1930.

Gross operating revenues for the first 10 months of 1940 totaled \$3,539,445,104 compared with \$3,281,797,253 for the same period in 1939, and \$4,512,318,485 for the same period in 1930, an increase of 7.9 per cent in 1940 above 1939, but 21.6 per cent below 1930. Operating expenses amounted to \$2,563,885,227 compared with \$2,413,032,871 for the same period in 1939, and \$3,340,656,001 for the same period in 1930—6.3 per cent above the former, but 23.3 per cent below 1930.

Class I roads in the 10 months paid \$340,659,809 in taxes compared with \$300,952,055 in the same period in 1939, and \$303,226,866 in the same period in 1930. For October alone the tax bill amounted to \$38,892,597, an increase of \$3,910,635 or 11.2 per cent above October, 1939. Nineteen Class I roads failed to earn expenses and taxes in the ten months, of which six were in the Eastern district, four in the Southern district, and nine in the Western district.

Gross for October amounted to \$413,589,928 compared with \$419,717,399 in October, 1939, and \$477,966,434 in October, 1930. Operating expenses totaled \$276,716,625 compared with \$271,538,049 in the same month in 1939, and \$322,443,081 in October, 1930.

Class I roads in the Eastern district for the 10 months had a net of \$294,101,289 or 2.84 per cent; for the same period in 1939, their net was \$255,829,024 or 2.48 per cent, while in 1930 it was \$388,453,595 or 3.83 per cent. Gross in the Eastern district for the 10 months totaled \$1,774,803,134, an increase of 10.8 per cent compared with 1939, but a decrease of 20.8 per cent compared with 1930; operating expenses totaled \$1,247,961,087, an increase of 9.2 per cent above the same period in

crease of 5.9 per cent compared with the same period in 1939, but a decrease of 18.2 per cent under the same period in 1930. Operating expenses totaled \$336,766,405, an increase of 7.9 per cent above the same period in 1939, but a decrease of 21.4 per cent under 1930.

Class I roads in the Southern district for October had a net of \$9,990,859 compared with \$12,107,553 in October, 1939, and \$10,146,795 in October, 1930.

Class I roads in the Western district for the 10 months had a net of \$172,640,331 or 1.88 per cent. For the same period in 1939 their net amounted to \$138,779,729 or 1.52 per cent, and for the same period in 1930 it was \$297,420,898 or 3.21 per cent. Gross in the Western district for the 10 months of 1940 amounted to \$1,318,823,579, an increase of 4.7 per cent above the same period in 1939, but a decrease of 23.6 per cent below the same period in 1930; operating expenses totaled \$979,157,735, an increase of 2.2 per cent compared with the same period in 1939, but a decrease of 22.1 per cent under the same period in 1930.

For October alone the roads in the Western district had a net of \$37,763,596 compared with \$36,216,836 in October, 1939, and \$53,501,838 in October, 1930.

Mechanical Division to Meet at St. Louis

The 1941 annual meeting of the Mechanical division, Association of American Railroads, will be held at the Hotel Jefferson, St. Louis, Mo., June 19 and 20. There will be no exhibits.

I. C. C. Suspends Proposed Reduced Rates on Sugar

The Interstate Commerce Commission has suspended from December 1 until July 1, 1941, several agency tariffs proposing reduced carload rates on sugar from all producing points in the United States to various destinations in Illinois, Indiana,

Iowa, Kentucky, Missouri, Ohio, Tennessee and Wisconsin over all-rail, all-water or water-rail routes. Examples of the proposed reductions to Chicago would be the cut in the New York-Chicago rate from 49 cents per 100 lb. to 43 cents; the New Orleans, La.-Chicago rate from 46 cents to 40 cents; and the San Francisco, Calif.-Chicago rate from 76 cents to 70 cents.

The C. P. R. in October

The Canadian Pacific in October had gross revenues totaling \$16,891,992 (up \$224,191 over last year). Operating expenses were \$11,421,355 (up \$597,717). Operating net was \$5,470,639 (down \$373,526). For the ten months, gross was \$136,739,804 (up \$16,627,580); expenses, \$112,979,190 (up \$9,416,541); operating net, \$25,760,614 (up \$7,211,039).

North Western Raises Speed Restriction

The Chicago & North Western has raised its speed restriction on trains operating through automatic train control between Elmhurst, Ill., and Council Bluffs, Iowa. Under the revised control system the maximum speed of freight trains is increased from 50 to 63 m. p. h. and the top speed of steam-powered passenger trains from 73 m. p. h. to 83 m. p. h. The maximum speed for Diesel-powered streamliners remains at 93 m. p. h. There is no change in the maximum low speed limit under restriction. Approximately 470 miles of double track line are affected.

Collision of Spanish Expresses Kills 61

At least 61 persons were killed and more than 80 injured when two fast passenger trains collided at Velilla de Ebro, Spain, on December 3, according to news dispatches. The collision occurred on the main line of the Northern of Spain between Madrid and Barcelona, about 30 mi. from Saragossa, the busiest line in the country and the route of many fast, heavy, through expresses. An open switch, which diverted one of the trains into the path of the other, is reported to have been the cause of the tragedy.

Motor Carrier Affiliates Seek I. C. C. Authority

The Burlington Transportation Company, an affiliate of the Chicago, Burlington & Quincy, has asked the Interstate Commerce Commission for authority to purchase the operating rights of Oscar Zurn, operating between Alliance, Nebr., and Chadron.

At the same time the New England Greyhound Lines, an affiliate of the New York, New Haven & Hartford, has asked authority from the commission to issue a \$120,000 12-year installment mortgage note for the purpose of financing improvements to a garage in Boston, Mass.

Testimony is Taken in Pullman Anti-trust Suit

It has been learned at the Department of Justice that proceedings are going forward in the government's anti-trust suit

against the Pullman Company, in which it was alleged that "the Pullman organization has prevented the railroads from using modern, light-weight, streamlined cars manufactured by competing companies in order to maintain in service its own obsolete equipment."

Frank Coleman, special assistant to the Attorney General, who is working on the case, explained recently that depositions have been taken during the past three months under the new federal rules of civil procedure which allow much "pre-trial" taking of evidence which is later incorporated into the record. These depositions, which include cross examination by the Pullman Company's attorneys, are being taken in various cities through the country where railroads have their main offices.

During the discussion of the case Mr. Coleman expressed the belief that the matter might go to trial in Philadelphia, Pa., in February or March of the coming year.

Fast Freight Service Established by Frisco and Southern

Fast freight service providing second morning delivery between Kansas City, Mo., and St. Louis and New Orleans, La., was established by the St. Louis-San Francisco and the Southern on December 1. The service is provided by the "Creole Flash" of the Frisco and the "Clipper" of the Southern. Cars leave Kansas City at 9:30 a. m. and St. Louis at 7:30 p. m., and arrive in New Orleans at 6:45 a. m. the second morning. Northbound they leave New Orleans at 9:10 p. m. and arrive in St. Louis at 7 a. m. and in Kansas City at 5:30 p. m. the second day.

One-Cent-a-Mile for Army Forces Over the Holidays

Member roads of the Association of American Railroads will make available to uniformed personnel of the Army, Navy and Marine Corps, reduced round-trip fares for holiday travel priced at one cent per mile in coaches between all points in the United States. The special tickets will be placed on sale from December 14 to January 14 and carry a return limit of 15 days from date of sale.

Officers and men of the forces may purchase them upon presentation of an official furlough fare certificate which will be obtainable from officers at Army and Navy establishments. The special fare will be made available to soldiers and sailors only on condition that they are traveling in uniform, on furlough and at their own expense. Military and naval personnel on duty are afforded special rates of long standing.

"Deficit Bill" Still Awaits Final Action by Senate

The so-called "deficit bill" (H. R. 10098) which would adjust the basis for settlements of certain short-line claims growing out of federal control was held on the Senate calendar this week by a pending motion to reconsider, made by Senator King, Democrat of Utah, after the measure had been passed by the Senate on November 26. If it finally gets through the Senate the bill will have to go back to the House for con-

sideration of a Senate amendment stipulating that no claim shall be certified for an amount in excess of \$150,000.

Explaining the reason for that limitation during the November 26 discussion of the bill, Senator Reed, Republican of Kansas, said that without such a provision "the Union Railroad might have been able to recover about \$600,000 which would go to the United States Steel Corporation." The Kansan said he had objected to that, but he thinks the bill is now "fair"; he understands that it covers every case "except this United States Steel Corporation road, which is really a plant facility of its own."

Adjustment Board Service Creditable Under Pension Act

National Railroad Adjustment Board service on and after June 21, 1934, is creditable under the Railroad Retirement and Unemployment Insurance Acts, according to a recent ruling of the Railroad Retirement Board. The ruling also holds that the Western Contact Committee and the Southeastern Committee for the National Adjustment Board have been employers under the acts since July 2, 1934, and August 8, 1934, respectively.

Argentina to Sell Corn as Railroad Fuel

The Argentine Ministry of Agriculture, on November 19, authorized the sale of government-purchased corn as fuel for railroads and electric power plants, according to United Press dispatches. The scale of prices fixed by the ministry will give the railroads unshelled corn at less than \$5 per metric ton (2,204 lb.). The government itself has paid almost \$12 per ton to the farmers for the corn.

The move is based on experiments recently carried out with the co-operation of the prospective railroad and utility purchasers, in which it was found that corn could be used at the fixed prices as cheaply as coal, wood or fuel oil.

More Roads Qualify for Release from Land-Grant Rates

Secretary of Interior Harold L. Ickes has approved several additional land-grant-claim releases filed by railroads which may now take advantage of the land-grant-rate-repeal provisions of the Transportation Act of 1940. The latest additions to the list of eligibles are: Seaboard Air Line; Southern; Alabama Great Southern (part of Southern); Chicago & North Western; Chicago, St. Paul, Minneapolis & Omaha; Chicago, Milwaukee, St. Paul & Pacific; Chicago, Rock Island & Pacific; Union Pacific; Missouri-Kansas-Texas; Pere Marquette; Illinois Central; Alabama & Vicksburg and Vicksburg, Shreveport & Pacific (parts of Illinois Central); Louisville & Nashville.

C. M. St. P. & P. Adds Another Fast Train

Another fast train, "the Midwest Hiawatha," will be placed in service by the Chicago, Milwaukee, St. Paul & Pacific on December 11. This train will cover the 488 miles between Chicago and Omaha in 480 minutes, with eight station stops enroute. The train will leave Chicago at

12:45 p. m. and at Manilla, Iowa, will be split, one section arriving in Omaha at 8:45 p. m., and the other in Sioux City, Iowa, at 9:40 p. m., and in Sioux Falls, S. D., at 11:55 p. m. Returning, one section will leave Omaha at 12:35 p. m., and the other will leave Sioux Falls at 9:10 a. m. and the combined sections will arrive in Chicago at 8:35 p. m.

The train will be hauled by brightly-hued streamlined oil burning locomotives. Its equipment will include a taproom-dining car, parlor cars, a lounge-observation car and luxury coaches with special conveniences for coach passengers.

Eastern Roads to Offer Reduced First Class Rates for Holidays

Member roads of the Trunk Line and Central Passenger associations have announced the offer of reduced first-class round-trip passenger fares based on 1% the regular one-way rate of three cents per mile, which figures out at 2.5 cents per mile each way. In conjunction therewith the Pullman Company will also reduce its charges for sleeping car and parlor car accommodations by 10 per cent for round-trip travel. The reduced round-trip tickets will be placed on sale from December 20 to January 1 and are good for return within any period up to January 5. No special bargain rate is contemplated in round-trip coach fares.

Return limits on round-trip coach fares in the South and between the South and North will be extended for the holiday season. In place of the present 15-day limit, tickets purchased from December 10 to 25, inclusive, will be good returning to and including January 10, 1941.

P. R. R. Runs 40 Specials for Army-Navy Game

The Pennsylvania operated 40 special trains to the Philadelphia (Pa.) municipal stadium on November 30 to carry spectators to the Army-Navy football game. Some 24 of the runs originated in New York, of which two were specials chartered by the West Point Society of New York and two by the Navy Academy Association. In addition, extra coaches and Pullmans were added to all regular half-hour trains between New York and Philadelphia.

West Point cadets and guests were carried to and from the game on three special trains totaling 38 cars operated by the West Shore (New York Central) and the Baltimore & Ohio via the Central of New Jersey and New Jersey Junction. Included in one of the trains was a horse car to care for Army's mascot mules. The Army team itself and special guests traveled in a special train operated by the West Shore and Pennsylvania via National junction, N. J.

Equipment Depreciation Orders

Equipment depreciation rates for 11 railroads, including the Louisville & Nashville and the Kansas City Southern, have been prescribed by the Interstate Commerce Commission in a new series of sub-orders and modifications of previous sub-orders in No. 15100, Depreciation Charges of Steam Railroad Companies. The com-

posite percentages for all equipment, which are not prescribed rates, range from 3.01 per cent for the L. & N. to 9.41 per cent for the Angelina & Neches River.

Prescribed rates for the L. & N. are as follows: Steam locomotives, 2.83 per cent; other locomotives, 3.92 per cent; freight-train cars, 3.08 per cent; passenger-train cars, 2.62 per cent; work equipment, 3.92 per cent; miscellaneous equipment, 13.03 per cent. The K. C. S. composite percentage is 3.07, derived from prescribed rates as follows: Steam locomotives, 3.18 per cent; other locomotives, 3.92 per cent; freight-train cars, 2.92 per cent; passenger-train cars, 3.05 per cent; work equipment, 3.03 per cent; miscellaneous equipment, 13.35 per cent.

St. Paul "Red Caps" Are Janitors, Too—And, Therefore, "Clerks"

Dismissing an application of the United Transport Service Employees of America (formerly the International Brotherhood of Red Caps), the National Mediation Board has held that station porters employed by the St. Paul Union Depot Company are part of the craft or class of clerical, office, station and storehouse employees and not a separate craft or class for the purposes of the Railway Labor Act. The effect of the decision is to leave the porters represented by the Brotherhood of Railway Clerks.

Among other findings of fact the Board's decision noted that the porters involved perform, in addition to "red cap" services, "a multitude of additional tasks," consisting of cleaning windows, dusting benches, cleaning offices, and other janitor services. And where "red caps" thus have other duties the Board has always excluded them from the list of eligibles for a unit consisting of individuals performing so-called personal services for railroad passengers.

Business Car Becomes Home of Big 4 Legion Post

A business car that was formerly used by officers of the Cleveland, Cincinnati, Chicago & St. Louis was recently donated

to Big Four Railway Post No. 116 of the American Legion at Beech Grove, Ind., by F. E. Williamson, president of the New York Central, to serve as the home of the post. The interior of the car contains a reception room in the observation end, a hall for meetings and entertainment, a fully equipped kitchen and all city utilities. The exterior of the car is painted blue with gold trimming.

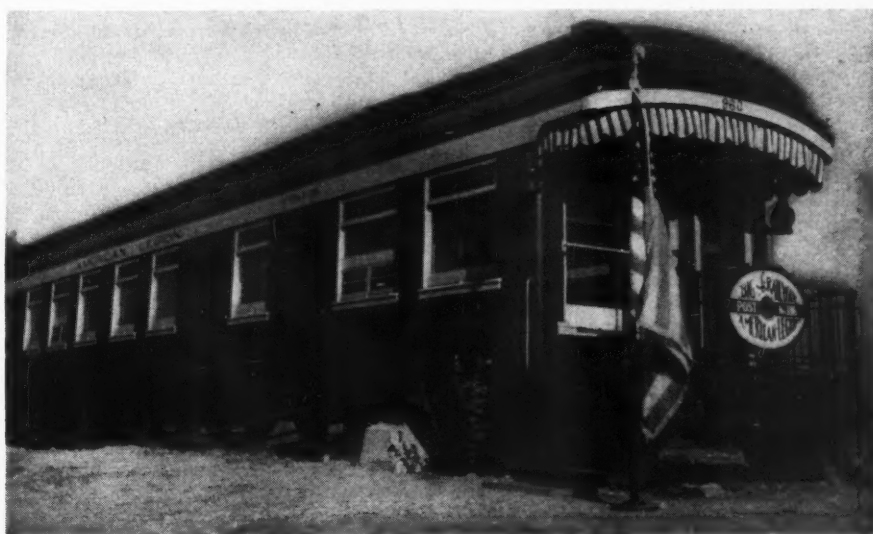
Retirement Board Names Employment Officers

Announcement of the appointment of nine employment officers named to administer the recently-established employment service was made on December 2 by the Railroad Retirement Board. The employment service, it is pointed out, is being operated in connection with the railroad unemployment insurance system, and makes possible the collection in each regional office of the Board of a complete file of unemployed railroaders in the region. Names and qualifications of the idle railroad workers are referred on request to railroad employers for interview and placement.

Those named to the new positions and their regions include: Peter S. Hogan, New York region; John J. Finnerty, Cleveland; Horace L. Carter, Chicago; James H. Williams, Atlanta; John R. Duck, Minneapolis; Otto Kirkes, Kansas City; Sam J. Williams, Dallas; Earl F. Rentfrow, Denver; and Harold O. Clark, San Francisco. Most of the appointees have had railroad experience, and all have been associated with the Railroad Retirement Board.

Distiller's Organ "Sells" American Railroads to Foreign Customers

Photographs and descriptions of the latest railroad trains in the United States provide the principal editorial feature in the current issue of the Schenley International Review, published by the Schenley International Corporation, whiskey distillers, for distribution among its customers throughout the world. Designed to acquaint foreign businessmen with the "American way of life," the magazine se-



Concrete Blocks Support the Business Car Home of American Legion Post No. 116

lected railroads as the feature for its new issue because, according to President T. C. Wiehe, modern railroads symbolize "a definite trend toward beauty in everything we use" in the United States.

Pictured in the 10-page layout of modern trains are the New York Central's "Twentieth Century Limited"; the Pennsylvania's "Broadway"; the Union Pacific's "City of Los Angeles," "City of Denver" and "City of San Francisco"; the Chicago & North Western's "400" and "Flambeau"; the Southern Pacific's "Daylight"; the Milwaukee's "Hiawatha," and the Burlington's fleet of "Zephyrs." There appears also a special freight train of the New York, New Haven & Hartford comprising 27 cars loaded with Schenley products.

Reduced Rates on Petroleum Between W. T. L. Points

Reduced rail rates published to meet the competition of private trucks have been approved by the Interstate Commerce Commission on refined petroleum and petroleum products in tank-car loads from pipe-line and marine terminals in Illinois, Iowa, Minnesota, Nebraska and Wisconsin to destinations in Western Trunk-Line territory. The proceeding was docketed as I. & S. No. 4791; and the report says the new schedules "will result in substantial reductions in rates for the shorter distances, but will grade gradually into the present rate adjustment beyond 300 miles."

The so-called independent refiners opposed the reductions, much of their testimony being about pipe-line competition and marketing methods, all of which, the commission said, "has little if any relevancy here." Meanwhile the commission found pertinent evidence which was "convincing that respondents are losing, or are in imminent danger of losing, an appreciable tonnage of petroleum products to motor transports under the existing rates, and that they stand to lose a considerably greater tonnage unless the relief sought is afforded them."

The "John Bull" Lives Off the Country-Side

Employees of the Long Island are authority for a tale of unorthodox foraging for locomotive fuel. It seems that in removing the Pennsylvania's replica of the "John Bull" locomotive (1831) from the late New York World's Fair, where it appeared in "Railroads on Parade," it was decided to run it under its own power over the busy tracks of the Long Island to the Morris Park shops, where it was to be prepared for shipment to Chicago to appear in a forthcoming celebration in connection with the installation of the big "S-1" locomotive in regular service. The antique unit took some 4½ hours for the run of approximately eight miles and reached its destination at 4:30 p. m., just before the rush of out-bound commuters' trains began.

First trouble was encountered at Forest Hills—right on the busy multiple-track main—when the fire "died." Wood commandeered from a nearby grocery store put life into her again. Then several miles farther the fire languished again and the employees in charge, anxious about the impending "rush hour," ransacked a dairy

plant along the line for old boxes, which, we learn, saved the day.

I. C. C. Cancels Order for \$3,000,000 Worth of Statistics

The Interstate Commerce Commission, Division 2, has rescinded its order of last January 9 which required the railroads to compile data regarding shipments made on certain days for use in the Nos. 28300 and 28310 general investigations of the class rate structure and the consolidated freight classification. As noted in the *Railway Age* of April 27, page 765, the railroads' petition for modification had estimated that compliance with the order as issued would have cost "at least \$3,000,000."

The commission's rescinding action came in an order dated November 25. Thus it had followed along about a month after the informal conferences on these general probes, held in Chicago on October 28 with representatives of interested parties. Moreover, the November 25 order embodied no call for a substitute compilation of data in lieu of that which the railroads are now relieved of supplying. The requirements of the order of January 9 were outlined in the *Railway Age* of January 20, page 170.

Meanwhile, another order of January 9 (applying only to 28310) was set aside last August as a result of an understanding whereby the information sought has been furnished voluntarily by the railroads.

What Happened to the Train?

The varied nature of the reactions of different individuals to the same incident is well illustrated by an item appearing recently in Joe Harrington's "All Sorts" column in the Boston (Mass.) Post concerning a delay on a Boston & Maine commuters' train which caused a number of patrons to be late to work. Mr. Harrington wrote in part.

"The employees of a large Boston firm are required to fill out slips when they are late reporting for work, stating the reason for their tardiness. One morning recently, one of the suburban trains into Boston shucked off a wheel near Everett, with the result that a dozen of the company's staff was late getting to their desks.

"And though it was the same mishap that delayed them, they all gave different excuses. To wit:

- Train jumped track.
- Train had hot box.
- Train's engine broke.
- Train wrecked.
- Train lost truck.
- Train lost wheel.
- Train split switch.
- Line blocked—train late.
- Train stopped for 20 minutes.
- Train on ground.
- Engine derailed.
- Train had trouble.

"The last explanation on the list seems to cover the situation thoroughly."

October Locomotive Shipments

October shipments of railroad locomotives totaled 58 as compared with 46 in September and 47, in October, 1939, according to reports received from builders by the Department of Commerce's Bureau of the Census. Shipments for this year's first 10 months totaled 432 locomotives, as

compared with 278 during the first 10 months of last year.

The aforementioned October total of 58 locomotives shipped included eight steam locomotives, one electric, 41 Diesel-electrics and three of other types for domestic service and four steam and one gasoline-mechanical for export. Unfilled orders at the close of October totaled 268 locomotives, including 125 steam, one electric, 114 Diesel-electrics and two of other types for domestic service, and 14 steam, 10 electric and two Diesel-electrics for export.

Data supplied by the Car Service Division, Association of American Railroads, on locomotive building in railroad shops show that 16 locomotives (three steam and 13 "gas or Diesel") were thus built in October as compared with four (all steam) in October, 1939. During this year's first 10 months 72 locomotives were built in railroad shops, as compared with 40 in the first 10 months of last year. As of November 1, railroad shops had unfilled orders for 10 locomotives, including nine steam and one "gas or Diesel."

Among a Railroad President's Correspondence

The story of correspondence which the late L. A. Downs, former chairman of the board of the Illinois Central, carried on with a school boy for more than four years is told in the current issue of the Illinois Central Magazine.

When the road's "Green Diamond" was inaugurated in 1936, a 13-year-old boy in a small California town heard Mr. Downs, then president of the railroad, speak on the radio and wrote him a letter wishing him and his train success. In reply, Mr. Downs sent him a picture of the train, responding also to references the young man had made to his hobby of tinkering with automobile engines. Thus came into existence a monthly correspondence which lasted for more than four years until last August when Mr. Downs, then chairman of the board, passed on.

During the period of correspondence, the boy recounted his progress in school; sent Mr. Downs an invitation to his graduation exercises and discussed railroad problems with him in his letters. In turn, the railroad executive encouraged his young friend, until the latter entered business. The file was closed when the railroad received a letter from him, expressing his sorrow at the passing of "one of the finest men I knew."

Hillman Reveals Location of "Ghost Towns"

Preliminary results of the survey of "ghost town" areas started by a staff of economists and industrial engineers three weeks ago were released on November 27 by Sidney Hillman, commissioner in charge of the Labor Division for the National Defense Advisory Commission. It is pointed out that the preliminary survey has resulted in the preparation of a special list of idle plants and equipment to aid defense contractors and speed up deliveries on their orders. The list has been mailed to 500 firms now working on defense orders.

Included in the list of "ghost towns" were two with railroad machine shop

equipment, of which Mr. Hillman gives the following description:

1. Central midwest. Railroad repair shop with a complement of machine tools, blacksmith and forging equipment. Normally employs 1,000 men; now running one shift at 50 per cent capacity. Capable of making and assembling any type of heavy machinery. Excellent transportation facilities.

2. Railway repair shop in Shenandoah Valley; complete with heavy and light lathes, drill presses, planers, boring mill, brass foundry, woodworking equipment, welding equipment. Will work on defense work 20 hours a day. Reliable skilled labor, inexpensive electric power and abundant water supply.

Club Meetings

The Car Department Association of St. Louis will hold its next meeting on December 17 at the Hotel DeSoto, St. Louis, Mo., at 8 p. m. Election of officers for the coming year will be held at the short business meeting preceding the annual Christmas party. A buffet lunch will be served at 7 p. m.

The Car Foremen's Association of Omaha, Council Bluffs and South Omaha Interchange will hold its next meeting on December 12 at the offices of the Union Pacific at Council Bluffs, Iowa, at 1:30 p. m. A. F. Pressler of the Griffin Wheel Co., will present a paper on wheels.

The Ohio Valley Transportation Advisory Board will hold its 17th annual meeting at the Hotel Gibson, Cincinnati, Ohio, on December 10, at 9:15 a. m. Included in the order of business will be a report on the handling of export freight by G. C. Randall, manager port traffic, Association of American Railroads. At the luncheon G. W. Warner, general manager, Armco International Corporation, Middletown, Ohio, will discuss "Intangible Essentials for Latin American Trading".

Frederic Lyford, trustee, New York, Ontario & Western, will be the principal speaker at the next meeting of the Railroadians of America, to be held at the Pennsylvania Railroad Y. M. C. A., New York, on December 13, at 7:30 p. m. Mr. Lyford's subject will be "The Operations and Problems of the N. Y. O. & W. Railroad".

Inaugurate Long-Time Study of Cement Performance in Concrete

In an effort to promote greater reliability of performance of concrete under varying service conditions, the Portland Cement Association is about to undertake a long-time study of the performance of cement in concrete, which is hoped to correlate laboratory and field observations and field performance. The program to be followed has been developed by an advisory committee comprising 12 members, 8 of whom are from outside the cement industry and represent the point of view of the consumer, and four of whom are from within the industry and represent the manufacturers. P. H. Bates, chief of the Clay and Silicate Products division of the National Bureau of Standards, will serve as chairman.

The committee has defined the objec-

tives of its study to be the determination of the extent to which the performance of concrete is affected by differences in cement, and the factors responsible for such differences. Emphasis is to be placed on a study of the characteristics of the cement in relation to concrete performance, and variations in concreting methods and workmanship will, in general, be avoided.

The field work will consist of 10 major projects located in different parts of the country in order to provide a wide variation of soil, weather and material conditions. The cement will be incorporated in concrete structures of several different types; a number will be full size structures, such as highway slabs, bridge decks, handrails, parapets, etc., which will undergo the usual loading and weathering encountered by such structures, while others will be non-service test specimens, including slabs, piles, columns and box-type retaining wall sections. The program will involve 90,000 sq. yd. of concrete pavement and an additional 2,500 cu. yd. of concrete in miscellaneous structures, requiring 35,000 bbl. of cement.

More Statements in Motor Vehicle Sizes and Weight Study

Additional statements by various interested parties, including American Trucking Associations, Inc., and the National Association of Motor Bus Operators, have been filed in the Interstate Commerce Commission's Ex Parte No. MC-15 investigation of the need for federal regulation of sizes and weights of motor vehicles. The railroad statement, filed on behalf of the Association of American Railroads and the American Short Line Railroad Association, was reviewed in the *Railway Age* of November 30, page 837.

Generally, the A. T. A. urged the commission to recommend to Congress that there is need for federal intervention, but it opposed Congressional establishment of specific size and weight limits. As the Trucking Association views it, the situation calls for legislation under which the commission might alter state regulations

gradually. Such legislation would authorize the commission to act, following petitions filed against a state law or regulation and hearings before a joint board. Among the foregoing recommendations and other things, the A. T. A. brief embodied charges that railroads have sponsored state laws and regulations that allegedly hamper interstate motor transportation.

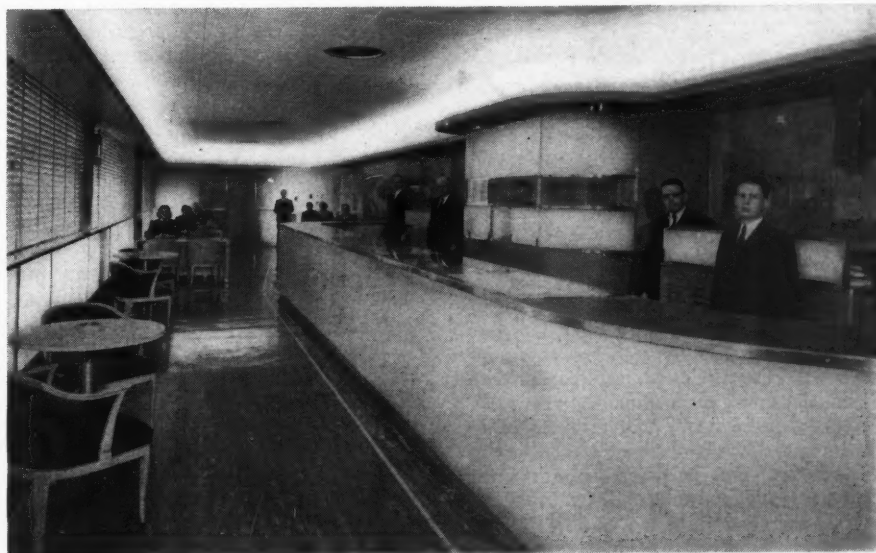
The National Association of Motor Bus Operators also urged the commission to report that there is a need for federal regulation; and to ask Congress for the necessary power. Among other briefs filed were those of the National Council of Private Motor Truck Owners; Keeshin Motor Express and Seaboard Freight Lines; the Detroit, Mich., Board of Commerce; the National Automobile Transporters Association; and the State of Kentucky.

The latter, filed by Assistant Attorney General M. B. Holifield, took the position that there is no need for federal regulation. Kentucky's interest in the matter, Mr. Holifield went on, "arises from, and only from, our desire to preserve the property of the state; to protect the safety and convenience of the public in its use of that property, and to maintain the right of the state to exercise its police power in a domain that has not been delegated to the federal government and with which the government should not interfere." The National Council of Private Motor Truck Owners took no position for the present; if the commission finds a need for federal regulation, the Council wants to be heard again.

C. B. & Q. Opens Modern Ticket Office in Chicago

A modern city ticket office was opened by the Chicago, Burlington & Quincy on the ground floor of the Bankers Building at Adams and Clark streets, Chicago, on December 2, in connection with which a dedicatory address by L. R. Capron, vice-president, was broadcast over station WGN.

Murals of western scenes, light hued furniture and indirect lighting are outstanding features of the interior arrange-



This New Burlington Office Is Designed for the Convenience and Comfort of Persons Purchasing Rail Transportation

ment of the new quarters, which are devoted exclusively to travel. They are supplemented by solicitation offices located on the seventh floor of the Bankers building. The space heretofore maintained by the Burlington in the consolidated ticket office will be abandoned on January 1.

Would Have I. C. C. Find Western Transit to Be Water Carrier

Examiner H. W. Archer has recommended an Interstate Commerce Commission finding that the Western Transit Company which undertakes to transport automobiles from Detroit, Mich., to Duluth, Minn., and Superior, Wisc., is a common carrier by water. Western neither owns nor operates any vessels, its operations being conducted under contracts with one or more lake lines carrying bulk freight.

Rejecting contentions that the Western is merely a freight forwarder and thus unregulated by the Interstate Commerce Act, the examiner's proposed report notes, among other things, that the respondent is solely responsible to the shipper for the safe transportation of the traffic; it issues through bills of lading; files with the commission proportional rates on automobiles delivered to rail carriers; and has in effect divisional arrangements with rail carriers. "In fact," the examiner concludes, "respondent's manner of transportation is no different from that frequently resorted to by lake lines, for they also use bulkers for the transportation of automobiles when their own facilities are inadequate . . ."

Thus Mr. Archer would have the commission find that Western is a water carrier under the provisions of the Interstate Commerce Act's new Part III. He adds that "While it is perhaps no longer important, respondent would seem to be equally a common carrier by water under Part I of the act, inasmuch as the transportation is performed 'partly by railroad and partly by water . . . under a common control, management, or arrangement for a continuous carriage or shipment.'"

N. J. Roads Lose Tax Case in Appeal—Must Pay 11 Million

Eight railroads having tracks situated in the state of New Jersey, which on November 2, 1939, received an injunction preventing the state from collecting more than 60 per cent of its tax assessments from 1934 to 1936, inclusive (raised to 70 per cent by a modifying order in January, 1940), until a revaluation of the railroad property had been made, lost the protection of that injunction on November 27 when the third U. S. circuit court of appeals over-ruled the district court. Under this decision the railroads are obligated to pay at once \$11,270,000 in property taxes for those years withheld in accordance with the district court injunction.

The decision of the circuit court, which was handed down by Judge A. B. Maris at Philadelphia, Pa., reversed an injunction issued by Judge Phillip Forman of the federal district court at Newark, N. J., restraining New Jersey state taxing authorities from collecting more than 70 per cent of the assessments of the eight litigant railroads until a complete revaluation of

the railroad property had been made. This injunction was handed down in response to railroad contentions that their property was assessed at 100 per cent, whereas other property in the state was valued for purposes of taxation at less than true value; also that state assessment did not take into account declining revenues and hence declining value of the property. The circuit court, however, in its over-ruling decision, supported the view of state officials that a federal court had no authority to interfere with the collection of taxes and that the assessments, even if they are excessive, do not violate the Fourteenth Amendment. The court finds that the matter of the legality of the assessments is one for the state courts to decide. In a case respecting 1932 and 1933 the state courts have already upheld New Jersey's state taxation methods.

Roads affected by the decision are the Central of New Jersey, the Delaware, Lackawanna & Western, Erie, Lehigh Valley, New Jersey & New York, New York Central (West Shore), New York, Susquehanna & Western, New York & Long Branch (C. N. J.—P. R. R.).

A. S. M. E. Honors Superheater Engineer

Carl A. W. Brandt, chief engineer of the Superheater Company, New York, was presented the Melville Medal "for original engineering work" by the American Society of Mechanical Engineers at its annual dinner and honors night on December 4 in New York. Mr. Brandt received the award for his paper entitled "The Locomotive Boiler".

The engineer so honored was born in Stockholm, Sweden, in 1881; studied mechanical engineering there and obtained his early experience with the Swedish Government Railways and the Sweden Atlas Locomotive Works. In 1902 he went with the New York Central and became mechanical engineer and master mechanic of the Big Four in 1910. Mr. Brandt joined the Superheater Company as its chief engineer in 1916. He continues in this position at present in charge of the development and design of locomotive equipment, including superheaters and feedwater heaters, in addition to similar apparatus for stationery power plants.

During the dinner five honorary memberships in the society were awarded. Recipients included James A. Seymour of Auburn, N. Y., inventor and developer of the McIntosh & Seymour engine, as well as numerous other inventions in the application of directly connected high-speed engines to electric generation. Mr. Seymour, in 1886, co-founded McIntosh, Seymour & Co., steam engine manufacturers, which concern later became manufacturers of Diesel engines and is now a subsidiary of the American Locomotive Company. Mr. Seymour retired from active business in 1922.

Freight Car Loading

Loadings of revenue freight for the week ended November 30 totaled 728,525 cars, the Association of American Railroads announced on December 5. This was a decrease of 4,963 cars or 0.7 per cent below

the preceding week, but an increase of 43,029 cars or 6.3 per cent above the corresponding week last year and an increase of 79,991 cars or 12.3 per cent above the comparable 1938 week.

Loading of revenue freight for the week ended November 23 totaled 733,488 cars. This was a decrease of 11,807 cars or 1.6 per cent below the preceding week, but an increase of 60,375 cars or 9 per cent above the corresponding week in 1939, and an increase of 171,830 cars or 30.6 per cent above the comparable 1938 week.

The summary as compiled by the A. A. R.'s Car Service Division follows:

| Revenue Freight Car Loading | | | |
|--------------------------------------|----------------|----------------|----------------|
| For Week Ended Saturday, November 23 | | | |
| Districts | 1940 | 1939 | 1938 |
| Eastern | 152,349 | 143,911 | 116,062 |
| Allegheny | 157,385 | 149,909 | 102,704 |
| Pocahontas | 46,386 | 44,247 | 41,032 |
| Southern | 107,192 | 96,598 | 86,011 |
| Northwestern .. | 103,612 | 83,844 | 69,462 |
| Central Western .. | 112,129 | 105,454 | 100,726 |
| Southwestern .. | 54,435 | 49,150 | 45,661 |
| Total Western Districts | 270,176 | 238,448 | 215,849 |
| Total All Roads. | 733,488 | 673,113 | 561,658 |
| Commodities | | | |
| Grain and grain products | 33,323 | 35,997 | 29,155 |
| Live stock | 15,819 | 13,779 | 13,770 |
| Coal | 141,958 | 131,277 | 120,001 |
| Coke | 12,199 | 11,357 | 6,758 |
| Forest products .. | 39,083 | 33,169 | 25,594 |
| Ore | 40,122 | 23,923 | 12,337 |
| Merchandise l.c.l. | 140,219 | 142,572 | 129,890 |
| Miscellaneous .. | 310,765 | 281,039 | 224,153 |
| Nov. 23 | 733,488 | 673,113 | 561,658 |
| Nov. 16 | 745,295 | 766,987 | 657,066 |
| Nov. 9 | 778,318 | 781,588 | 636,446 |
| Nov. 2 | 794,797 | 801,108 | 672,967 |
| Oct. 26 | 837,651 | 829,358 | 708,590 |

Cumulative Total,
47 Weeks 32,907,177 30,664,441 27,509,924

In Canada.—Carloadings for the week ended November 23 totaled 63,088, as compared with 55,594 in the previous week and 59,761 last year, according to the summary issued by the Dominion Bureau of Statistics.

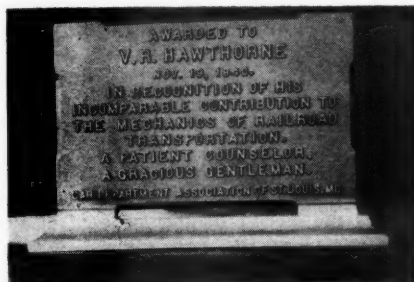
| Total for Canada: | Total Cars Loaded | Total Cars Rec'd from Connections |
|-------------------------------|-------------------|-----------------------------------|
| Nov. 23, 1940 | 63,088 | 27,369 |
| Nov. 16, 1940 | 55,594 | 25,774 |
| Nov. 9, 1940 | 59,492 | 26,749 |
| Nov. 25, 1939 | 59,761 | 23,113 |
| Cumulative Totals for Canada: | | |
| Nov. 23, 1940 | 2,534,594 | 1,163,082 |
| Nov. 25, 1939 | 2,312,844 | 1,008,766 |
| Nov. 26, 1938 | 2,229,914 | 966,482 |

St. Louis Car Men Honor V. R. Hawthorne

At the dinner and meeting of the Car Department Association of St. Louis, held Tuesday evening, November 19, at the Hotel De Soto, St. Louis, Mo., V. R. Hawthorne, secretary, Association of American Railroads, Mechanical Division, was the guest of honor and made the principal address, an abstract of which was published in the *Railway Age* issue of November 23, page 394.

At the conclusion of Mr. Hawthorne's address, F. E. Cheshire, president of the Car Department Association of St. Louis and general car inspector, Missouri Pacific, complimented the author on his effective work in co-ordinating the activities of the various A. A. R. committees, especially those having to do with the more efficient interchange of railway freight equipment. In the name of the association, Mr. Cheshire presented Mr. Hawthorne with a bronze plaque inscribed "Awarded to V. R. Haw-

thorne, November 19, 1940, in recognition of his incomparable contribution to the mechanics of railroad transportation, a patient counsellor, a gracious gentleman. Car Department Association of St. Louis, Mo."



Plaque Presented to V. R. Hawthorne on November 19 by the Car Department Association of St. Louis

Supply Trade

P. C. Cady has been appointed district sales representative of the **Union Railway Equipment Company**, Chicago, with headquarters at 30 Church street, New York.

A. B. Morey, treasurer of the **Gisholt Machine Company**, Madison, Wis., has been elected vice-president and has been succeeded by H. J. Homewood, chief accountant and office manager. C. K. Swafford, general superintendent, has been elected a director.

E. E. Moore, general superintendent of the Gary works of the **Carnegie-Illinois Steel Corporation**, Chicago, has been elected vice-president, industrial relations, succeeding D. A. Barrett, who retired on December 1, upon the completion of 44 years' service with the corporation and predecessor companies.

The **A. M. Byers Company**, Pittsburgh, Pa., will soon enlarge its activities to include the production of alloy steels, including stainless. An addition will be built to the company's Ambridge plant and will be used as a melt shop for new electric furnace equipment. Other existing basic production equipment for heating and rolling alloys will be used. The production of billets and bars for alloy steel fabricators will begin in four to six months.

John M. Spangler, general sales manager of the **National Carbon Company**, has been appointed a vice-president of that company. Mr. Spangler, a graduate of Pennsylvania State College, joined the National Carbon Company in 1915. He became manager of the Railroad department five years later and in 1923 was made head of the Western Sales division with headquarters in Chicago. He became successively manager of the Eastern division with offices in New York, assistant general sales manager and in 1925 general sales manager.

Donald A. Robison has been appointed a vice-president of the **Caterpillar Tractor Company** with administrative direc-

tion of all selling and advertising activities. Gale E. Spain will assume Mr. Robison's former position as general sales manager. Mr. Robison is a graduate of the University of Nevada and has been associated with the Caterpillar Tractor Company for many years. Since 1926 he has advanced through various activities in the credit and treasury departments to the office of assistant treasurer, treasurer and then general sales manager. Mr. Spain, a mechanical engineering graduate of Oregon State College, was once associated with the Willamette Iron & Steel Works as sales manager. He joined the Caterpillar Tractor Company in 1929 and has held positions in the merchandise, engine sales and general sales departments. He was manager of the sales development division prior to his new appointment.

Alexander D. Bruce, vice-president and secretary of the **Vapor Car Heating Company, Inc.**, Chicago, has been elected executive vice-president, and Otis A.



Alexander D. Bruce

Rosboro, a director, has been elected secretary. Mr. Bruce was born in Guelph, Canada, in 1887. His early employment was with a large carriage manufacturing plant and with the Standard Fitting & Valve Company in Canada. In 1909 he entered the employ of the Chicago Car



Otis A. Rosboro

Heating Company as storekeeper, and was successively purchasing agent and later Canadian manager. In 1917, upon the organization of the Vapor Car Heating Com-

pany, Inc., he was elected secretary. In 1926, Mr. Bruce was elected a director and vice-president and secretary of the Vapor Car Heating Company.

Mr. Rosboro was born in Illinois in 1886. In 1904, he entered the employ of the Illinois Central at its Centralia shops and later was a secretary in the mechanical department at Chicago. In 1910, he was employed as secretary to the president of the Chicago Car Heating Company, which later merged into the Vapor Car Heating Company. In 1926 he was elected assistant treasurer and in 1934 a director.

OBITUARY

F. B. Hamerly, vice-president of the Independent Pneumatic Tool Company of Chicago, died November 27, of a heart attack, while inspecting the company's plant at Los Angeles, Cal.

H. C. Dreibuss, chief mechanical engineer of the Scullin Steel Company, died November 22, at St. Louis, Mo. He had been with the Scullin Steel Company for 34 years.

William S. Hamm, consulting engineer and a director of the Adams & Westlake Company, with headquarters in Elkhart, Ind., died in Denver, Colo., on December 1. He had been in the employ of the company 61 years.

TRADE PUBLICATIONS

LOCOMOTIVE GAGES.—The Ashton Valve Company, 161-179 First street, Cambridge (Boston), Mass., has issued a 30-page catalog, 44 R.R., descriptive of locomotive gages for motive power, gage fittings, testing equipment, etc.

LOCOMOTIVE SPOTTER.—Bulletin No. LS-C-400 has just been issued by the Whiting Corporation, Harvey, Ill. It illustrates and describes the latest high-capacity machine developed by this company for spotting locomotives while performing such operations as squaring valves, connecting locomotives and tenders, applying rods, etc. The eight-page bulletin shows how these various operations are performed and describes the principal features in the construction and use of the locomotive spotter.

RAIL DEFECT MANUAL.—Sperry Rail Service, Hoboken, N. J., has issued a second edition of its Rail Defect Manual which was originally published in 1934. This is a pocket-size publication, bound in loose-leaf form with flexible leatherette covers, which illustrates by means of photographs and drawings the various types of rail defects, and in each case it explains briefly the manner of occurrence and importance of the defect, its cause and how it progresses and how to identify it before and after the rail has broken. Except that the color of the covers has been changed from blue to brown, and that four new pages have been added, the new edition of the manual is identical with the original. Copies of the four new pages are being furnished without charge to holders of the first edition. The cost of the complete new edition is 40 cents per copy for delivery in the United States and 50 cents per copy for foreign delivery.

Equipment and Supplies

Equipment Buying Continues Brisk

Orders for locomotives and freight cars mount with good year indicated

Railway equipment purchases for domestic service reported in the *Railway Age* during the month of November totaled 40

locomotives, 9,026 freight cars and 10 passenger-train cars. Of the 40 locomotives ordered, 13 were Diesel-electric and 27 steam. This compares with 30 locomotives (23 Diesel-electric and 7 steam), 11,786 freight cars and 67 passenger-train cars reported in the preceding month of this year and with 27 locomotives (all Diesel-electric), 5,542 freight cars and 12 passenger-train cars ordered in the corresponding month last year. During November American companies also announced receipt of orders for 30 steam locomotives for export to Brazil and Bolivia. Outstanding domestic orders placed in November were Northern Pacific's purchase of 14 steam locomotives, Louisville & Nashville's expenditure of \$7,500,000 for 3,150 freight

cars and Bessemer & Lake Erie's \$5,000,000 order for 1,000 freight cars and seven locomotives.

Total number of orders reported as placed during the first 11 months of 1940 were as follows: 430 locomotives, 56,718 freight cars and 270 passenger-train cars, an increase of 84 locomotives, 4,929 freight cars and 82 passenger-train cars as compared with the corresponding 11 months of 1939. Of the 430 locomotives ordered this year, 250 were Diesel-electric and 180 steam.

The 430 locomotives reported as ordered during the first 11 months of this year represents the largest number ordered in any full year since 1929, excepting 1936, and is only 12 locomotives less than ordered during the first 11 months of 1936. It appears possible that a complete year-end survey of locomotives ordered in 1940 may disclose a total which will compare favorably with the total of 536 ordered in 1936—thus making 1940 the biggest locomotive year since 1929. The rapid increase in number of Diesel-electric locomotives being purchased is particularly noteworthy and will far exceed the number ordered in 1939, the largest preceding year. The 56,718 freight cars reported as ordered during the first 11 months of 1940 is also the largest number ordered in any full year since 1929, excepting 1936, and is nevertheless ahead of orders placed during the first 11 months of 1936.

As will be noted, November orders for locomotives and freight cars have kept pace with the renewed activity in railroad equipment buying in evidence during the last half of this year. More than half of the total number of 56,718 freight cars ordered during the first 11 months were reported in the three-month period, September-November. Several large inquiries and contemplated purchases remain outstanding for both locomotives and freight cars, and there is evidence to indicate that the upturn in railway equipment buying that has taken place this year may not attain full momentum until 1941.

Rail purchases by the carriers during November totaled 170,737 tons and raised the total tonnage ordered during 1940 to 625,379 tons, a decrease of 709,468 tons as compared with the corresponding period of 1939.

LOCOMOTIVES

THE UNION PACIFIC is inquiring for five, ten, or fifteen freight locomotives.

THE WABASH is taking delivery of one 660-hp. Diesel-electric switching locomotive from the Electro-Motive Corporation.

THE EAST ERIE COMMERCIAL has on order one 350-hp. Diesel-electric locomotive with the General Electric Company.

THE SEMMETT-SOLVAY COMPANY has on order two 500-hp. Diesel-electric locomotives with the General Electric Company.

THE NORTHEAST OKLAHOMA has ordered one 500-hp. Diesel-electric locomotive from the General Electric Company.

THE ELGIN, JOLIET & EASTERN has ordered 15 Diesel-electric locomotives in addition to the 15 reported as ordered in the *Railway Age* of August 31. Seven of 600 hp. and two of 1,000 hp. were:

Domestic Equipment Orders Reported in Issues of the Railway Age in November 1940 (Excluding November 2)

LOCOMOTIVES

| Date | Name of Company | No. | Type | Builder |
|---------|---|-----|------------------|--------------------------|
| Nov. 23 | Union Railroad | 2 | Diesel-elec. Sw. | Baldwin Locomotive Works |
| Nov. 23 | Terminal Railway, Alabama State Docks | 1 | 0-6-0 Sw. | American Locomotive Co. |
| Nov. 23 | Florida East Coast | 1 | Diesel-electric | Electro-Motive Corp. |
| Nov. 23 | Newburgh & South Shore | 1 | Diesel-elec. Sw. | American Locomotive Co. |
| Nov. 23 | Wyandotte Terminal | 1 | Diesel-elec. Sw. | General Electric Co. |
| Nov. 30 | Bessemer & Lake Erie | 5 | Texas | Baldwin Locomotive Works |
| Nov. 30 | Norfolk & Western | 2 | 0-8-0 Sw. | American Locomotive Co. |
| Nov. 30 | Keweenaw, Green Bay & Western | 5 | 4-8-4 | Company Shops |
| Nov. 30 | New York, New Haven & Hartford | 1 | Diesel-elec. Sw. | American Locomotive Co. |
| Nov. 30 | Southern | 2 | Diesel-elec. Sw. | General Electric Co. |
| Nov. 30 | Northern Pacific | 2 | Diesel-electric | Electro-Motive Corp. |
| Nov. 30 | Northern Pacific | 8 | 4-8-4 | American Locomotive Co. |
| Nov. 30 | Northern Pacific | 6 | 4-6-6-4 | American Locomotive Co. |
| Nov. 30 | Great Northern | 2 | Diesel-electric | Electro-Motive Corp. |

FREIGHT CARS

| | | | | |
|---------|--|-------|--------------|--------------------------|
| Nov. 9 | Atchison, Topeka & Santa Fe.. | 300 | Ballast | Rodger Ballast |
| | | 250 | Gondola | General American |
| | | 200 | Hopper | General American |
| | | 50 | Flat | General American |
| Nov. 9 | Lehigh & New England | 300 | Hopper | Pressed Steel Car |
| Nov. 16 | Chicago, West Pullman & Southern | 2 | Gondola | Company Shops |
| Nov. 16 | United States | 20 | Box | General American |
| Nov. 16 | United States Army | 4 | Flat | Haffner-Thrall Car Co. |
| Nov. 16 | United States Navy | 6 | Gondola | Haffner-Thrall Car Co. |
| | | 5 | Flat | Haffner-Thrall Car Co. |
| | | 3 | Box | Haffner-Thrall Car Co. |
| Nov. 16 | North Western Refrigerator Line Company | 200 | Refrigerator | American Car & Foundry |
| Nov. 16 | Electro Bleaching Gas Company | 4 | Tank | American Car & Foundry |
| | | 2 | Tank | General American |
| Nov. 16 | Wilson Car Line (Div. of Wilson & Co.) | 400 | Refrigerator | Company Shops |
| Nov. 23 | New York Central | 1,000 | Box | Despatch Shops |
| Nov. 23 | Seaboard Air Line | 500 | Box | Pullman-Standard |
| | | 200 | Hopper | Bethlehem Steel Co. |
| Nov. 23 | E. I. du Pont de Nemours & Co. | 4 | Tank | American Car & Foundry |
| Nov. 23 | Monsanto Chemical Company.. | 13 | Tank | General American |
| | | 2 | Tank | American Car & Foundry |
| Nov. 23 | Hooker Electrochemical | 9 | Tank | General American |
| | | 2 | Tank | American Car & Foundry |
| Nov. 23 | Denver & Rio Grande Western. | 500 | Box | Pressed Steel Car |
| Nov. 30 | Louisville & Nashville..... | 1,400 | Hopper | American Car & Foundry |
| | | 1,600 | Hopper | Pullman-Standard |
| | | 50 | Gondola | Pullman-Standard |
| | | 100 | Box | Pullman-Standard |
| Nov. 30 | Bessemer & Lake Erie..... | 650 | Hopper | Greenville Steel Car Co. |
| | | 300 | Box | Magor Car Co. |
| | | 50 | Flat | American Car & Foundry |
| | | 100 | Box | Greenville Steel Car Co. |
| | | 20 | Caboose | Despatch Shops, Inc. |
| | | 200 | Flat | |
| Nov. 30 | New York Central | 50 | Hopper | Company Shops |
| Nov. 30 | Berwin-White Coal Mining Company | 20 | Caboose | Company Shops |
| Nov. 30 | Pittsburgh & West Virginia.... | 300 | Gondola | Greenville Steel Car Co. |
| Nov. 30 | Detroit, Toledo & Ironton..... | 5 | Hopper | American Car & Foundry |
| Nov. 30 | Wabash Car & Equipment Company | 30 | Cov. Hopper | Company Shops |
| Nov. 30 | Norfolk & Western | 15 | Gondola | Pullman-Standard |
| Nov. 30 | Colorado & Wyoming..... | 50 | Refrigerator | Company Shops |
| Nov. 30 | Cudahy Car Lines (Div. Cudahy Packing Co.) | 35 | Flat | Magor Car Co. |
| Nov. 30 | Panama | 30 | Box | Magor Car Co. |
| | | 15 | Gondola | Magor Car Co. |
| Nov. 30 | Northern Pacific | 30 | Cov. Hopper | General American |

PASSENGER-TRAIN CARS

| | | | | |
|---------|---|---|-----------------|------------------------|
| Nov. 23 | Chicago, North Shore & Milwaukee | 8 | ..... | St. Louis Car Co. |
| Nov. 30 | Atlanta & West Point—Western of Alabama | 2 | Baggage-Express | American Car & Foundry |

placed with the Electro-Motive Corporation; three of 600 hp. and two of 1,000 hp. with the American Locomotive Company; and one of 1,000 hp. with the Baldwin Locomotive Works.

THE MONONGAHELA CONNECTING has ordered two 750-hp. Diesel-electric locomotives from the General Electric Company.

THE BOSTON & MAINE has received delivery of four 380-hp. Diesel-electric locomotives from the General Electric Company.

THE RUSSIAN GOVERNMENT ("U. S. S. R.") has ordered ten 250-hp. electric switching locomotives from the General Electric Company.

THE ILLINOIS TERMINAL will shortly take delivery of one 1,800-hp. electric freight locomotive from company shops.

THE ALUMINUM COMPANY OF AMERICA has on order one 350-hp. Diesel-electric locomotive with the General Electric Company.

THE JONES & LAUGHLIN STEEL CORPORATION has placed an order for one steam freight locomotive with the American Locomotive Company.

THE PITTSBURGH LIMESTONE CORPORATION, United States Steel Subsidiary, has on order five 320-hp. Diesel-electric locomotives with the General Electric Company.

PANAMA RAILROAD—Bids will be received to December 30 by the general purchasing officer, the Panama Canal, Washington, D. C., for three oil-burning steam locomotives of special 5-ft. gauge.

THE E. I. DU PONT DE NEMOURS CO. has ordered one 350-hp. Diesel-electric locomotive from the General Electric Company. This is in addition to two 300-hp. Diesel-electric locomotives delivered in November and two delivered earlier this year.

THE NEVADA CONSOLIDATED COPPER COMPANY, subsidiary of Kennecott Copper Corporation, has ordered two 970 hp. electric freight locomotives from the General Electric Company. This is in addition to one delivered in October.

THE UNITED STATES ARMY has ordered two Diesel-electric locomotives, one of 350-hp. and one of 300-hp., from the General Electric Company. This is in addition to two Diesel-electric locomotives from the General Electric Company delivered in November.

THE READING has taken delivery of 13 Diesel-electric switching locomotives as follows: four of 600 hp. and one of 1,000 hp. from the Electro-Motive Corporation, three of 600 hp. and two of 1,000 hp. from the Baldwin Locomotive Works and three of 660 hp. from the American Locomotive Company.

FREIGHT CARS

THE MINISTRY OF TRANSPORTATION AND PUBLIC WORKS, BRAZIL, has placed orders for 150 30-ton flat cars and 150 30-ton box

cars with the Pullman-Standard Car Manufacturing Export Company and 150 30-ton gondola cars, 8 30-ton tank cars and 150 sets of trucks for 20-ton freight cars with the American Car & Foundry Export Co.

THE PITTSBURGH & LAKE ERIE is inquiring for 1,000 box cars.

THE ELGIN, JOLIET & EASTERN is inquiring for 500 50-ton box cars.

THE ILLINOIS TERMINAL has ordered 250 box cars from the American Car & Foundry Co.

THE UNION TANK CAR COMPANY will construct 150 50-ton tank cars for completion in March, 1941.

THE CHICAGO, INDIANAPOLIS & LOUISVILLE is in the market for 100 50-ton box cars and 100 50-ton flat cars.

THE ERIE has ordered 50 53-ft. 6-in. all-steel flat cars of 70 tons' capacity from the Greenville Steel Car Company.

THE TENNESSEE CENTRAL has ordered 100 40-ft. 6-in. steel-sheathed box cars of 40 tons' capacity from the Pullman-Standard Car Manufacturing Company.

THE ETHYL GASOLINE CORPORATION is preparing to purchase 24 all-steel tank cars, 18 of 50 tons' capacity and 6 of 40 tons' capacity. American Car & Foundry Co. will receive the order.

THE SOUTHERN PACIFIC has on order 125 53-ft. 6-in. steel underframe flat cars of 70 tons' capacity, 15 65-ft. 6-in. all-steel drop-end gondola cars of 70 tons' capacity and 50 29-ft. 3¼-in. all-steel cabooses with the Southern Pacific Equipment Company.

THE SOLVAY PROCESS COMPANY of Syracuse, N. Y., has ordered five 70-ton, 10,000-gallon, nickel-clad, Class ICC 103-W Type 27 tank cars and four 40-ton, multi-unit Type 27 tank cars from the American Car & Foundry Co.

THE LOUISVILLE & NASHVILLE has on order 50 65-ft. 6-in. all-steel mill-type gondola cars of 70 tons' capacity with the Pullman-Standard Car Manufacturing Co. This raises total orders by this company in 1940, as reported in *Railway Age* issues, to 3,825 freight cars.

THE NORFOLK SOUTHERN has ordered 350 freight cars, placing 250 40-ft. 6-in. steel box cars of 40 tons' capacity with the Magor Car Corporation, 50 41-ft. 9-in. all-steel gondola cars of 50 tons' capacity with the American Car & Foundry Co. and 50 30-ft. 11¾-in. all-steel hopper cars of 50 tons' capacity with the Virginia Bridge Company.

PASSENGER CARS

THE PACIFIC ELECTRIC has received delivery of 30 59-seat all-steel passenger coaches from the Pullman-Standard Car Manufacturing Company.

THE CANADIAN PACIFIC has on order 25 83-ft. 10½-in., 72-seat steel frame passenger-train cars with company shops and 10 83-ft. 10½-in. steel baggage and express cars with the Canadian Car & Foundry Co.

IRON AND STEEL

THE CENTRAL OF NEW JERSEY has ordered 4,500 tons of rail from the Bethlehem Steel Company.

THE MINISTRY OF TRANSPORTATION AND PUBLIC WORKS, BRAZIL, has ordered 18,260 tons of rails and accessories from the United States Steel Export Company.

THE SEABOARD AIR LINE has ordered 12,820 tons of 100 lb. rail, placing 7,720 tons with the Tennessee Coal, Iron & Railroad Co. and 5,100 tons with the Bethlehem Steel Company.

THE ATCHISON, TOPEKA & SANTA FE has ordered 36,800 tons of rails, placing 13,800 tons of 112-lb. and 131-lb. rails with the Carnegie-Illinois Steel Corporation, 2,000 tons of 131-lb. rails with the Inland Steel Company, and 21,000 tons of 112-lb. and 131-lb. rails with the Colorado Fuel & Iron Company. This is in addition to the 18,000 tons reported as ordered in the *Railway Age* of November 2.

SIGNALING

THE ELECTRO-MOTIVE CORPORATION has placed an order with the General Railway Signal Company for 4 complete sets of intermittent inductive auto-manual train control engine equipments for Baltimore & Ohio locomotives.

THE ELECTRO-MOTIVE CORPORATION has placed an order with the General Railway Signal Company covering 14 complete sets of intermittent inductive automanual train control engine equipments for Atlantic Coast Line locomotives.

THE INDIANA HARBOR BELT has placed an order with the General Railway Signal Company for materials for an installation of NX interlocking at its junction with the Chicago & Western Indiana at Fifty-fifth street, Chicago. In addition to the NX control machine, the order includes 11 relay panels, factory-wired, for Type-B plug-in relays which are used exclusively inside the tower and all relay housings and Type-K relays for use at outside locations. Model-5C switch machines and Type-SA signals will be used throughout.

THE DENVER & SALT LAKE has placed orders with the General Railway Signal Company for an absolute permissive block signaling installation covering the 50 miles between Denver, Colo., and Moffat tunnel, using coded track circuits throughout. The installation is so designed that it may be converted to centralized traffic control operation with minimum change in the future. The order includes knocked-down bungalows for siding ends, to be assembled in the field by railroad forces. Type-SA color-light signals, Type-K line relays, Type-CR code-following relays and d-c. oscillating code transmitters are used throughout. The installation includes a small stretch of unit-wire centralized traffic control at the east portal of the Moffat tunnel, with manual block operation through the tunnel by coded track circuits without the use of line wires.

Financial

ATLANTIC COAST LINE.—Abandonment.—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon its branch line extending from Latta, S. C., to Clio, 19.8 miles.

BALTIMORE & OHIO.—Director Resigns.—William T. Noonan, president of the Buffalo, Rochester & Pittsburgh when the Baltimore & Ohio absorbed its operations in 1932, and vice-president of the B. & O. at Rochester, N. Y., has resigned his membership on the board of the latter road. Mr. Noonan is still president in charge of the remaining corporate activities of the Buffalo, Rochester & Pittsburgh and its subsidiaries.

BALTIMORE & OHIO-NEW YORK CENTRAL-PENNSYLVANIA.—Bonds and Stock of the Dayton Union.—The Dayton Union has filed an amended application in Finance Docket No. 12383 in which it asks authority from the Interstate Commerce Commission to issue and dispose of 10,590 shares of its capital stock and \$3,900,000 of its general mortgage bonds. Series A bonds in the amount of \$1,500,000 will be dated December 1, 1940, and will mature in the amount of \$150,000 on December 1 of each of the years from 1941 to 1950, inclusive.

The \$2,400,000 of series B bonds will be dated December 1, 1940 and will mature December 1, 1965. The series A bonds will have varying rates of interest while the series B bonds will carry 3½ per cent. The stock will be issued directly to the proprietary systems, the Baltimore & Ohio, the New York Central, and the Pennsylvania, who have also asked the commission for authority to assume liability jointly and severally as guarantors of the general mortgage bonds.

BESSEMER & LAKE ERIE.—Equipment Trust Certificates.—This road awarded an issue of \$4,000,000 equipment trust certificates of one per cent on a bid of 99.216 to Salomon Brothers & Hutzler, of New York, and associates, on December 3. The bid represented the record low interest cost to the road of 1.15. The certificates, which mature in ten equal annual installments, were immediately re-offered at prices to yield from 0.21 to 1.50 per cent.

CHICAGO GREAT WESTERN.—Acquisition.—The reorganization committee, acting under authority of the final plan of reorganization of this company under section 77 of the Bankruptcy Act, has asked the Interstate Commerce Commission to permit the Chicago Great Western Railway, the reorganized company, to acquire the properties and assets of the old company, the Chicago Great Western Railroad.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Abandonment.—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Renner, S. Dak., to Wentworth, 29.6 miles, of which 14 miles, between Renner, S. Dak., and Colton, is

wholly owned by this company and 15.6 miles between Colton, S. Dak., and Wentworth is jointly owned by it and the Great Northern.

CITY OF GALVESTON.—Acquisition, Operation, and Bonds.—This company has been authorized by Division 4 of the Interstate Commerce Commission to acquire and operate a line of terminal railroad in the city of Galveston, Tex., 47 miles, and to acquire certain property of the Galveston Wharf Company. At the same time Division 4 authorized the city to issue \$6,250,000 of revenue bonds to be secured by the property. The bond issue will be divided into two parts, series A and B, with the series A bonds in the sum of \$3,750,000 maturing serially from August 1, 1941, to August 1, 1965, and bearing interest at the rate of 3½ per cent, while the series B bonds in the amount of \$2,500,000 will mature August 1, 1970, and bear interest at the rate of four per cent.

GULF, MOBILE & OHIO.—Abandonment by the Mobile & Ohio.—The First National Bank of Mobile, Ala., and the Mobile & Ohio, respectively, have been authorized by Division 4 of the Interstate Commerce Commission to abandon a line and the operation of a line extending from Tacon, Ala., to Bayou la Batre, 29.9 miles.

LEHIGH VALLEY-ERIE.—Bonds of the Buffalo Creek.—The Buffalo Creek has been authorized by Division 4 of the Interstate Commerce Commission to issue \$3,000,000 of 25-year, first mortgage, 3¾ per cent bonds, the proceeds to be used to pay \$1,000,000 of its first mortgage five per cent bonds due January 1, 1941, and to redeem on or before January 1, 1941, \$2,000,000 of its first refunding mortgage five per cent bonds due January 1, 1961.

At the same time Division 4 authorized the proprietary companies and lessees of the Buffalo Creek, the Lehigh Valley and the Erie, to guarantee the interest and principal and sinking fund payments on the new bonds.

MADISON, ILLINOIS & ST. LOUIS.—Purchase and Stock.—The Madison, Illinois & St. Louis Railroad Company, a new company, has been authorized by Division 4 of the Interstate Commerce Commission to purchase the properties of the Madison, Illinois & St. Louis Railway Company. At the same time the St. Louis Merchants Bridge Terminal Railway has been authorized by Division 4 to acquire control of the new company through ownership of its stock. Division 4 has also authorized the new company, which was formed to take over the assets of the old company, whose charter had expired, to issue 25 shares of capital stock of a par value of \$100 a share to finance the acquisition of the old company's assets. The stock will then be transferred to the St. Louis Merchants Bridge Terminal Railway.

PENNSYLVANIA-NEW YORK CENTRAL-BALTIMORE & OHIO.—New Bond Issue.—Morgan Stanley & Co., Inc., and Kuhn, Loeb & Co., New York, jointly offered on November 29 an issue of \$3,900,000 Dayton Union bonds granted by these three roads. The issue consists of \$2,400,000 of 3¼'s due

1965—priced at 101½—and \$1,500,000 of serial maturities at rates from ¾ to 2¼ per cent due 1941 to 1950, at par.

MINNEAPOLIS, ST. PAUL & SAULT STE MARIE.—Reorganization.—The federal district court at Minneapolis, Minn., on December 3, extended to February 1 from December 1 the time within which the road must file a plan of reorganization under Section 77 of the bankruptcy act.

PERE MARQUETTE.—Abandonment by the Huron & Western.—The Huron & Western and the Pere Marquette, respectively, have been authorized by Division 4 of the Interstate Commerce Commission to abandon a line and the operation of a line known as the Huron & Western branch and extending from a point of connection with the Detroit & Mackinac north of Bay City, Mich., westerly approximately 9.7 miles.

PERE MARQUETTE-WABASH-PENNSYLVANIA.—Bonds of the Fort Street Union Depot.—The Fort Street Union Depot in Detroit, Mich., has asked the Interstate Commerce Commission for authority to issue and sell \$1,329,000 of first mortgage 3¾ per cent bonds, to be dated as of December 1, 1940, and to mature December 1, 1965. The proceeds will be used to pay off or retire at or prior to maturity or extended maturity dates, all of the present funded obligations of the company as follows: (1) First mortgage 4½ per cent bonds due January 1, 1941, in the amount of \$1,000,000, (2) first and second mortgage five per cent bonds due July 1, 1915, in the amount of \$329,000, of which bonds in the amount of \$2,000 have been extended to April 17, 1941, and are outstanding, and the remaining \$327,000 which have been reacquired and pledged as collateral security for notes mentioned in item (3), and (3) three-year mortgage extension notes due July 1, 1918, and extended to April 17, 1941, outstanding in the amount of \$327,000.

ST. LOUIS-SAN FRANCISCO.—Reorganization.—The Interstate Commerce Commission has issued a modified final plan of reorganization for this company under section 77 of the Bankruptcy Act which makes certain minor changes in the mechanics of carrying the plan into effect. The most important change had to do with the reorganization committee, whose duty it is to put the new plan into operation. The final plan made no provision for supervision of this committee, but under the modified plan its activities will be under the supervision of the federal district court in St. Louis. No changes were made in the allocation of new securities.

SOUTHERN PACIFIC.—Abandonment.—This company has asked the Interstate Commerce Commission for authority to abandon its Laguna branch extending from Colorado, Calif., to Potholes, 11.7 miles.

SOUTHERN.—Equipment Trust Certificates.—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$3,000,000 of 1½ per cent equipment trust certificates, maturing in 10 equal annual install-

ments of \$300,000 on December 1 in each of the years from 1941 to 1950, inclusive. The issue has been sold at 100.57 to a group composed of Mellon Securities Corporation, Lazard Freres & Co., Kidder, Peabody & Co., and E. W. Clark & Co., making the average annual cost to the company approximately 1.77 per cent.

SPOKANE, PORTLAND & SEATTLE.—*Abandonment by the Oregon Electric and United Railways.*—The Oregon Electric, an affiliate of this company, has asked the Interstate Commerce Commission for authority to abandon a part of its line extending from Portland, Ore., to Beaverton, 12.8 miles; while another affiliate, the United Railways, has requested permission to abandon 3.7 miles in Portland, Ore. The abandonment is necessitated by a road-widening project in downtown Portland and the refusal of the city to renew the franchises of the two companies.

TOLEDO, ANGOLA & WESTERN.—*Note.*—This company has asked the Interstate Commerce Commission for authority to issue a \$210,000 promissory note to the Cleveland Trust Company, bearing interest at the rate of three per cent and secured by a first mortgage on the company's property. The note will be dated January 1, 1941, will mature on January 1, 1946, and will be guaranteed by the Medusa Portland Cement Company. The proceeds of the loan from the Cleveland Trust Company, which will be secured by the note, will be used to redeem on January 1, 1941, the company's first mortgage six per cent gold coupon bonds dated July 1, 1925, in the amount of \$211,700.

UNION PACIFIC.—*Abandonment by the Oregon-Washington Railroad & Navigation.*—This company and the Oregon-Washington Railroad & Navigation have asked the Interstate Commerce Commission for authority to abandon their Primo branch extending from North River Junction, Wash., to Vesta, 15.3 miles.

WILKES-BARRE & EASTERN.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has ordered that the present salaries of Joseph P. Jennings, trustee, and Leo W. White, counsel, at the rates of \$5,000 and \$4,000 a year, respectively, be continued for a period of not more than four months from November 1, 1940.

Average Prices of Stocks and Bonds

| | Dec. 3 | Last week | Last year |
|---|--------|-----------|-----------|
| Average price of 20 representative railway stocks.. | 29.82 | 30.90 | 32.41 |
| Average price of 20 representative railway bonds.. | 59.92 | 60.43 | 58.43 |

Dividends Declared

Beech Creek.—50¢, quarterly, payable January 2 to holders of record December 16.
Chicago, Burlington & Quincy.—\$2.00, payable December 24 to holders of record December 14.
Great Northern.—Preferred, 50¢, payable December 24 to holders of record December 9.
Norfolk & Western.—\$5.00, payable December 19 to holders of record November 30.
Pittsburgh, Fort Wayne & Chicago.—\$1.75, quarterly, payable January 2 to holders of record December 10; Preferred, \$1.75, quarterly, payable January 7 to holders of record December 10.
Reading Company.—2nd Preferred, 50¢, quarterly, payable January 9 to holders of record December 19.

Construction

BALTIMORE & OHIO.—The Pennsylvania Public Utility Commission has approved elimination of company's grade crossings with state highway routes No. 59 and No. 17072 in Sandy township. Plans call for vacation of the portion of route No. 17072 which extends across company's tracks and right of way 80 ft. east of its junction with route No. 59, and the relocation of route No. 59 to a point in the city of Dubois 918 ft. north of the present crossing. A viaduct 772 ft. in length and approaches thereto 761 ft. in length will be constructed to carry the highway above the grade of the tracks. The proposed viaduct will consist of two reinforced concrete sections each 267 ft. in length and two plate girder spans having a combined length of 238 ft. 6 in., and will carry a reinforced concrete pavement 26 ft. in width and a 5 ft. sidewalk. Total cost of the project is estimated at \$221,810.

CHESAPEAKE & OHIO.—This company has been authorized by Division 4 of the Interstate Commerce Commission to construct a branch line extending from a point on the Big Sandy subdivision near Prestonsburg, Ky., northwesterly, 10 miles.

GRAND TRUNK WESTERN.—The Michigan State Highway Department has awarded contracts totaling \$148,812 to Hamer Brothers, Inc., Detroit, Mich., for the elevation of two tracks of the Grand Trunk Western and Fourteenth street over South Saginaw street (State highway No. 10) in Flint, Mich. The project will include the construction of a double track bridge for the railroad, with a raise in the grade line of the tracks and the depression of South Saginaw street. Also included in the project are the construction of a highway bridge for Fourteenth street, which parallels the tracks, over South Saginaw street, the raising of the passenger station, the construction of retaining walls between the railroad and Fourteenth Street, bridges, stairways and other incidental work. The railroad bridge will have one walkway and will cross South Saginaw street at an angle of approximately 79 deg. It will consist of two 33-ft. and two 38-ft. 3-in. continuous reinforced concrete slab-type decks, supported by gravity-type abutments and column- and girder-type piers. The structure will provide for two 30-ft. clear roadways, separated by a 10-ft. boulevard strip and two 6-ft. sidewalks on South Saginaw street. The Fourteenth Street bridge will consist of four reinforced concrete T-beam spans, providing a 26-ft. clear roadway and two 5-ft. sidewalks for Fourteenth street.

LOUISVILLE & NASHVILLE.—A contract has been awarded the Ross and White Company, Chicago, for construction of a mechanical coal and sand plant at South Louisville, Ky., which, together with certain track and other changes to be made at that point, will cost about \$50,000.

WHEELING & LAKE ERIE.—A contract amounting to \$37,450 has been awarded the Railroad Water & Coal Handling Company, Chicago, for the construction of a water softening plant at Brewster, Ohio.

Railway Officers

EXECUTIVES

F. C. Berghaus, manager of mail and express traffic of the Chicago, Indianapolis & Louisville (Monon), has been appointed assistant to the vice-president, in charge of mail, express traffic and trucking operations, a newly created position, with headquarters as before at Chicago.

FINANCIAL, LEGAL AND ACCOUNTING

William R. Stevens has been appointed assistant general attorney of the New York Central and **Gerald E. Dwyer** has been appointed assistant to general attorney.

R. H. Nold, chief clerk to the freight agent of the Elgin, Joliet & Eastern, has been promoted to freight claim agent, with headquarters as before at Chicago, succeeding **H. M. De Gette**, who retired on December 2.

OPERATING

Frank MacPhillamy has been appointed assistant superintendent of power of the New York Central at New York, succeeding **Ora C. Montgomery**, deceased.

Charles Smale, road foreman of engines on the Pere Marquette at St. Thomas, Ont., has been appointed trainmaster, with the same headquarters.

H. B. Coburn has been appointed assistant superintendent on the Oregon division of the Union Pacific, a newly created position, with headquarters at Seattle, Wash.

E. B. Mitchell, superintendent of the Northern division of the Colorado & Southern, with headquarters at Denver, Colo., retired on December 1, and **A. J. Horton**, superintendent of the Southern division, with headquarters at Trinidad, Colo., has been appointed superintendent of the consolidated Northern and Southern divisions, with headquarters at Denver.

J. G. Shannon, assistant to the vice-president of the Railway Express Agency, Inc., with headquarters at Chicago, has been appointed general manager of the Midcentral department, with the same headquarters, succeeding **J. F. Glover**, who has been appointed general manager of the Chicago department, with headquarters at Chicago. Mr. Glover succeeds **Arthur C. White**, who has been transferred to the Eastern Lakes department, with headquarters at Cleveland, Ohio.

L. C. Ayers, general superintendent of the eastern general division of the Norfolk & Western at Roanoke, Va., has been appointed assistant general manager, with the same headquarters. **O. M. Dawson**, superintendent of the Scioto division at Portsmouth, Ohio, succeeds Mr. Ayers. **H. C. Wyatt**, superintendent of the Shenandoah division, has been transferred to the

Scioto division to succeed Mr. Dawson. **J. W. Kirk**, trainmaster of the Pocahontas division, has been promoted to superintendent of the Shenandoah division, succeeding Mr. Wyatt. **H. B. Smith**, assistant trainmaster of the Scioto division, has been promoted to trainmaster of the Pocahontas division, succeeding Mr. Kirk. **W. H. Jackson**, road foreman of engines of the Pocahontas division, succeeds Mr. Smith as assistant trainmaster of the Scioto division and **F. R. Litz**, assistant road foreman of engines on the Pocahontas division, has been appointed road foreman of engines on that division.

Alfred C. James, whose appointment as superintendent of insurance and safety of the Atlantic Coast Line, with headquarters at Wilmington, N. C., was reported in the *Railway Age* of November 16, was born in Allentown, Pa. He received his education in that state, and was graduated from Pennsylvania State College in 1915.



Alfred C. James

In 1920 he joined the insurance department of the subsidiary companies of the Bethlehem Steel Corporation and was associated with the developments of that department, later becoming manager. He was in continuous service of the Bethlehem Steel Corporation until just prior to his connection with the Atlantic Coast Line.

Timothy M. Cassidy, trainmaster on the Chicago & North Western at Clinton, Iowa, has been promoted to superintendent of the Northern Iowa division, with headquarters at Mason City, Iowa, succeeding **Elmer Terrill**, who has been transferred to the Madison division at Madison, Wis. Mr. Terrill relieves **Leon B. Kendall**, who has been transferred to the Iowa division at Boone, Iowa, replacing **Henry A. Parish**, who has been transferred to the Galena division, with headquarters at Chicago, succeeding **Henry R. Koch**. Mr. Koch has been transferred to the Wisconsin division, with headquarters as before at Chicago, relieving **Phillip G. Campbell**, who retired on December 1. **James H. Kline**, assistant trainmaster at Madison, has been promoted to trainmaster at Clinton, replacing Mr. Cassidy.

Mr. Campbell was born in 1874 and entered railway service in 1889 as a telegraph operator on the North Western at Palatine, Ill. Ten years later he was promoted to train dispatcher at Winona, Minn.,

and was later transferred successively to Boone, Iowa, and Chicago. In 1917, he was advanced to assistant superintendent of the Eastern Iowa division, with headquarters at Clinton, Iowa, later being transferred to the Wisconsin and Galena divisions. Mr. Campbell was promoted to superintendent of the Galena division, with headquarters at Chicago, in February, 1922, and two years later he was transferred to the Wisconsin division, with the same headquarters.

Mr. Cassidy was born at Eyota, Minn., on November 7, 1884, entered railway service on March 16, 1901, as a telegraph operator on the Minnesota division of the North Western. On June 5, 1905, he was promoted to train dispatcher at Winona, Minn., and on June 1, 1912, he was advanced to night chief dispatcher at that point. Mr. Cassidy was promoted to chief dispatcher at Winona on November 1, 1917, and to trainmaster at Baraboo, Wis., on September 9, 1929. He later served successively as trainmaster at Tracy, Minn., chief dispatcher at Huron, S. D., and trainmaster at Chicago, Huron and Clinton, Iowa, being located at the latter point until his promotion on December 1.

L. K. Sorensen, whose promotion to general superintendent on the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Milwaukee, Wis., was announced in the *Railway Age* of November 30, entered the service of the Milwaukee on August 14, 1907, as a carpenter at Savanna, Ill., later being transferred to Harlowton, Mont. On October 15, 1916, he was promoted to bridge and building foreman at Harlowton and on November 1, 1919, he was advanced to chief carpen-



L. K. Sorensen

ter, with the same headquarters. Mr. Sorensen was promoted to trainmaster at Aberdeen, S. D., on November 5, 1925, and was further advanced to division superintendent, with headquarters at Deer Lodge, Mont., on February 1, 1927. In the spring of 1936, Mr. Sorensen was transferred to Butte, Mont., and on January 1, 1940, to the Coast division, with headquarters at Tacoma, Wash., the position he held until his recent promotion.

TRAFFIC

Robert B. Holmes, assistant general passenger agent on the New York Central system, with headquarters at Chicago, re-

tired on November 30, after nearly 51 years continuous service with that road.

E. P. Morrill has been appointed Canadian freight agent of the Erie at Toronto, Ont., Canada. The position of general agent at Toronto has been abolished.

F. R. Locke, acting industrial commissioner of the Grand Trunk Western, has been appointed industrial commissioner, with headquarters as before at Detroit, Mich.

William J. Wynne, traffic representative of the Delaware, Lackawanna & Western at New Haven, Conn., has been promoted to general agent at New Haven, to succeed **William K. Martin**, who has been transferred to New York.

Stuart F. Evans, traveling freight agent for the Elgin, Joliet & Eastern in the Pacific Coast territory, has been promoted to general agent and assigned to the same territory, with headquarters at Chicago, a newly created position.

C. S. Promnitz, passenger representative for the New York Central at New Orleans, La., has been appointed general agent, passenger department, at Atlanta, Ga., to succeed **O. L. Mitchell**, who has retired, effective November 30, in conformity with the company's age limitation rule. **Richard Mercer**, passenger representative at San Antonio, Tex., has been appointed general agent at New Orleans.

Harry B. Willis, general agent, passenger department, of the Chicago, Indianapolis & Louisville (Monon), has been promoted to general passenger agent with headquarters as before at Chicago, succeeding **Edward P. Cockrell**, who retired on December 1. **C. J. Baumruck**, rate clerk at Chicago, has been advanced to general agent, with the same headquarters, succeeding to the duties of Mr. Willis.

Mr. Cockrell was born at Kimmunity, Ill., on October 1, 1870, and entered railway service on April 1, 1889, as a stenographer with the Chicago & Atlantic (now part of the Erie). In September, 1890, he went with the Monon as a stenographer, later being promoted to rate clerk and chief clerk. In August, 1909, Mr. Cockrell was advanced to assistant general passenger agent and in January, 1915, to general passenger agent, the position he held until his retirement.

Marshall E. Boyd, whose promotion to assistant freight traffic manager on the Western Pacific, with headquarters at San Francisco, Cal., was announced in the *Railway Age* of November 23, was born in Chicago on May 14, 1902, and was graduated from the University of Michigan in 1926. He entered railway service in 1924 as a clerk in the office of the superintendent of the Pullman Railroad at Pullman, Ill., later leaving to complete his studies at the University of Michigan. After graduation, he engaged in commercial sales work, and on January 8, 1930, he returned to railway service as a reconsigning clerk in the traffic department of the Elgin, Joliet & Eastern at Chicago. Several months later, Mr. Boyd was appointed tariff compiler and was later assigned to rate work

involving legislation within Western Trunk Line territory. On August 16, 1937, he went with the Western Pacific as an assistant general freight agent at San Francisco, the position he held until his recent promotion, which was effective on November 16.

N. R. Lehmann, assistant general freight agent of the Norfolk & Western, has been appointed general coal freight agent, with headquarters as before at Roanoke, Va., succeeding **F. S. Baird**, whose promotion to assistant vice-president in charge of traffic was noted in the *Railway Age* of November 2. Mr. Lehmann was born in Glen Wilton, Va., and began his railroad career as a clerk in the car record office of the Norfolk & Western in 1912. Three years later he was appointed clerk in the freight traffic department, and in 1921 was promoted to traveling agent in



N. R. Lehmann

the same department. In 1922 he was appointed clerk in the office of the general freight agent, and was advanced to chief clerk to the general coal freight agent five years later. In 1929 Mr. Lehmann was appointed assistant chief rate clerk and two years later became chief rate clerk. He was promoted to assistant chief of divisions bureau in October, 1936, and several months later was appointed chief of divisions bureau. In May, 1937, Mr. Lehmann was appointed commerce agent and in July, 1937, was promoted to assistant general freight agent, the position he held until his recent appointment.

ENGINEERING AND SIGNALING

W. L. Dayton, superintendent of signals of the Grand Trunk Western, has been appointed signal engineer, a change of title, with headquarters as before at Detroit, Mich.

Charles H. Morrison has retired from his position as signal engineer of the New York, New Haven & Hartford because of ill health, and **Waldo F. Follett**, assistant signal engineer, has been promoted to signal engineer with headquarters at New Haven, Conn., succeeding Mr. Morrison.

Mr. Follett was born at Valley Falls, R. I., on November 8, 1872, and at the age of 19 entered the telegraph department of the New Haven as a wireman on April 1, 1892. In 1893, he was transferred

to the car department and was placed in charge of the wiring of cars, in which capacity he served for five years. In December, 1898, he resigned from the New Haven to enter the employ of the Electrical Manufacturing Company. In June, 1900, he returned to the New Haven in the signal department as a signalman. He was later promoted to electrician, thence to electrical inspector. He remained in the latter capacity until August, 1912, when he was promoted to assistant engineer in the signal department on that road. In June, 1918, Mr. Follett was promoted to assistant signal engineer of the New Haven, with headquarters at New Haven, Conn., the position he held until his recent promotion.

Mr. Morrison was born at Dayton, Ohio, on July 2, 1870, and took special instruction in mechanical engineering after graduating from high school. He entered railway service in 1892 as a draftsman for the Chicago, Milwaukee & St. Paul (now Chicago, Milwaukee, St. Paul & Pacific), and in November, 1893, he was promoted to signal inspector, in which capacity he remained until April, 1901, when he left the Milwaukee to become assistant signal engineer for the Railroad Supply Company in Chicago, Ill., serving in that position until July, 1902. From July to October, 1902, he served as a special inspector for the Chicago, Rock Island & Pacific. In October, 1902, Mr. Morrison was appointed signal engineer of the Erie division of the Erie, and in December, 1904, he was promoted to signal engineer of the entire system. On January 1, 1907, he was appointed signal engineer of the New Haven, which position he held at the time of his retirement on November 1.

R. A. Gravelle, former assistant engineer and for the last few months field representative in the industrial department of the Grand Trunk Western, has been promoted to engineer maintenance of way, with headquarters at Detroit, Mich., succeeding to the duties of **Frank A. Tranzow**, superintendent of track, whose retirement on October 31 was announced in the *Railway Age* of November 16.

R. E. Patterson, assistant to the chief engineer of the Lehigh Valley, has been promoted to the newly-created position of engineer maintenance of way, with headquarters as before at Bethlehem, Pa., and the position of assistant to chief engineer has been abolished. **W. W. Crowley**, supervisor of track, with headquarters at Sayre, Pa., has been promoted to the newly-created position of general inspector of maintenance, also with headquarters at Bethlehem.

PURCHASES AND STORES

R. A. Schuff, division storekeeper on the Chicago, Burlington & Quincy at Denver, Colo., has been transferred to Galesburg, Ill., succeeding **J. A. Allen**, whose death on November 16 is announced elsewhere in these columns. **J. K. McCann**, inspector of stores, with headquarters at Chicago, has been promoted to division storekeeper at Denver, relieving Mr. Schuff, and **A. G. Swanson**, assistant storekeeper at Aurora, Ill., has been ap-

pointed inspector of stores, with headquarters at Chicago, replacing Mr. McCann. **J. J. Jirousek**, division storekeeper at St. Joseph, Mo., has been promoted to assistant storekeeper at Aurora, succeeding Mr. Swanson, and **J. W. Schwartz**, chief clerk at the West Burlington (Iowa) store, has been promoted to division storekeeper at St. Joseph, relieving Mr. Jirousek.

OBITUARY

Peter Leslie Sheperd, traffic manager of the Savannah & Atlanta, with headquarters at Savannah, Ga., died on November 18.

Alvin C. Hedlund, general agent, freight department, for the Southern Pacific at Chicago, died of pneumonia in that city on December 2.

Fletcher Holsted Sillick, assistant comptroller of the Hudson & Manhattan, died on November 27 at his home in Boonton, N. J., after a year's illness. He was 64 years old.

Norman S. Buckingham, general solicitor of the New York, New Haven & Hartford at New Haven, Conn., died on November 30 after a heart attack, at the age of 59. Mr. Buckingham entered railroad service in 1898 as clerk in the law department of the New York, New Haven & Hartford and subsequently served as chief clerk, assistant attorney, assistant solicitor, counsel for Connecticut, assistant general counsel, general counsel and general solicitor.

Daniel Taylor, general attorney on the Chicago, Rock Island & Pacific, with headquarters at Chicago, died at his home in that city on November 2. Mr. Taylor was born at Verona, Miss., on August 6, 1880, and graduated from the University of Arkansas in 1900, and from Cumberland University in 1906. From 1907 to 1909, Mr. Taylor served as assistant attorney general of Arkansas. He then engaged in the general practice of law in Pine Bluff, Ark., and Camden, and during the first World War served as a major in the Judge Advocate General's department of the U. S. Army. In 1920, he entered railway service as a general attorney on the Rock Island, with headquarters at Chicago, the position he held at the time of his death.

G. Victor Kurz, general passenger agent of the Pullman Company, with headquarters at Chicago, died after a short illness in the Alexian Brothers hospital in that city on November 29. Mr. Kurz was born in Chicago on January 3, 1884, and took a course in commercial law. He first entered railway service with the Pennsylvania in a clerical capacity, and in March, 1906, he went with the Pullman Company as a clerk in the passenger department. He later served for short periods as a traveling agent and a ticket agent and was then promoted to chief clerk. On January 1, 1923, Mr. Kurz was advanced to assistant general passenger agent and on February 1, 1934, he was promoted to general passenger agent, with headquarters as before at Chicago, the position he held at the time of his death.

Table of Revenues and Expenses begins on next left-hand page

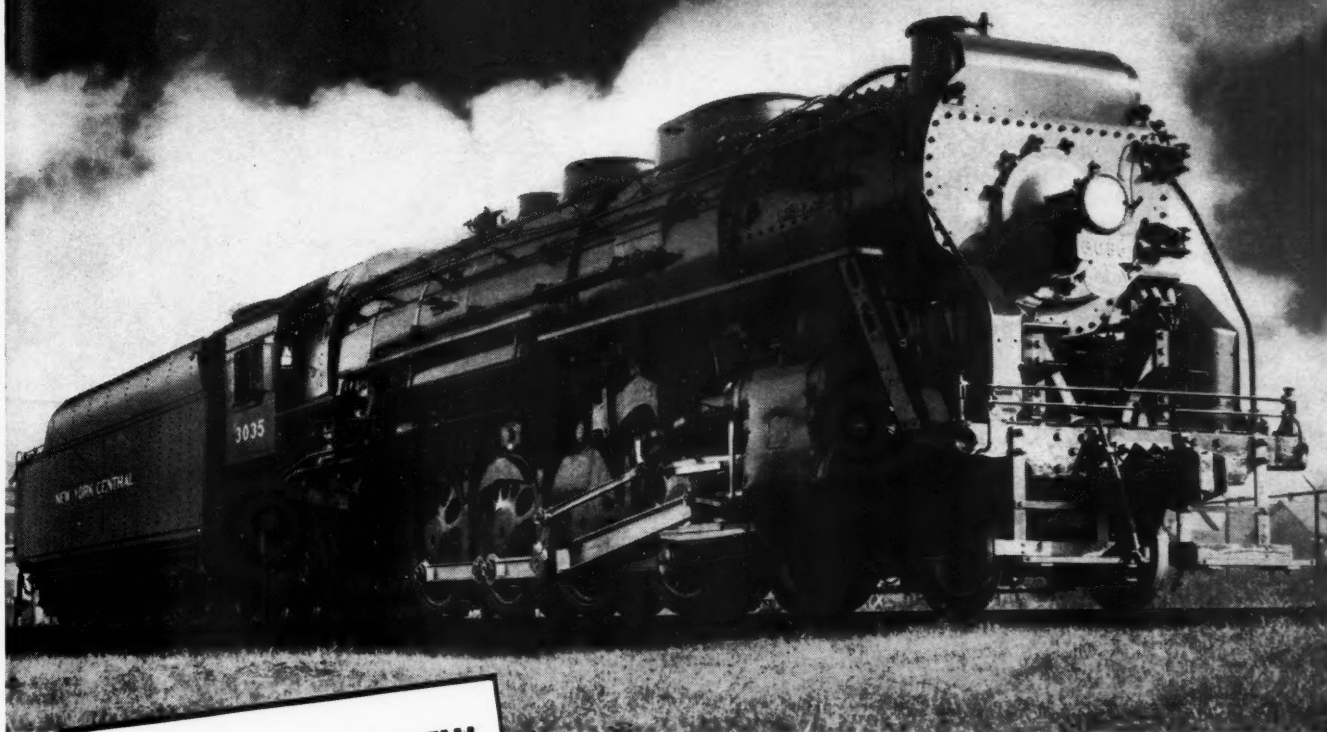
INCOME TAXES AND EXPENSES OF 1940

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Continued on next left-hand page



Greater Protection...Smoother Riding...Longer Life



ASSURED THE 50 NEW



LOCOMOTIVES

BY **FRANKLIN ECONOMY DEVICES**

The fifty new New York Central locomotives, which are being delivered by the Lima Locomotive Works, Incorporated, and the American Locomotive Company, are assured of safe, easy riding and effective dampening of oscillation between engine and tender by the application of the Franklin E-2 Radial Buffer. This device prevents lost motion and subsequent destructive shocks to drawbar and pins. Its twin, the Franklin Automatic Compensator & Snubber

has also been applied to automatically maintain constant, accurate adjustment of the driving box wedges. » » » Other Franklin economy devices which have been installed on all, or part, of the order include: The Locomotive Booster, F-2 Precision Power Reverse Gear, and No. 8 Driving Box Lubricator and Spreader. » » » On your new power, or when modernizing your old power, specify . . . Franklin for safety and economy.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK
CHICAGO
MONTREAL

December 7, 1940

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1940—CONTINUED

| Name of road | Av. mileage operated during period | Operating revenues | | | Operating expenses | | | Operating ratio | Net from railway operation | Net railway operating income | |
|--|------------------------------------|--------------------|------------------------|--------------|-----------------------------------|-----------|------------------|-----------------|----------------------------|------------------------------|-------------|
| | | Freight | Passenger (inc. misc.) | Total | Maintenance of way and structures | Traffic | Trans- portation | | | 1940 | 1939 |
| Chicago, Milwaukee, St. Paul & Pacific | 10,858 | \$9,639,617 | \$604,750 | \$11,308,099 | \$1,464,957 | \$219,986 | \$3,648,511 | 66.5 | \$3,793,481 | \$2,714,572 | \$2,319,812 |
| Chicago, Rock Island & Pacific | 10,878 | 78,545,850 | 6,559,889 | 94,312,815 | 15,765,021 | 2,293,921 | 34,010,200 | 77.2 | 21,475,420 | 10,353,420 | 5,279,839 |
| Chicago, Rock Island & Pacific | 7,900 | 6,353,470 | 669,036 | 7,022,506 | 1,108,224 | 268,903 | 2,610,745 | 69.1 | 2,426,260 | 1,670,312 | 1,331,979 |
| Chicago, Rock Island & Pacific | 7,894 | 54,341,502 | 6,746,990 | 67,146,488 | 9,833,369 | 2,589,252 | 24,866,212 | 77.8 | 14,883,851 | 6,139,717 | 4,298,018 |
| Chicago, St. Paul, Minneapolis & Omaha | 1,629 | 1,531,436 | 113,949 | 1,751,068 | 224,991 | 40,433 | 698,922 | 74.1 | 453,910 | 337,293 | 214,148 |
| Clinchfield Railroad | 1,629 | 12,698,692 | 1,304,389 | 14,981,285 | 2,662,240 | 392,967 | 6,588,242 | 83.4 | 2,492,426 | 1,337,519 | 212,728 |
| Clinchfield Railroad | 308 | 662,633 | 3,358 | 671,886 | 124,894 | 19,807 | 119,872 | 47.7 | 35,104 | 278,031 | 389,057 |
| Colorado & Southern | 786 | 526,162 | 44,298 | 624,061 | 62,173 | 121,426 | 238,446 | 74.4 | 159,757 | 114,151 | 81,784 |
| Colorado & Southern | 786 | 4,429,470 | 363,967 | 5,294,807 | 940,057 | 143,774 | 4,544,213 | 85.9 | 748,594 | 82,060 | 364,219 |
| Fort Worth & Denver City | 902 | 4,427,914 | 71,138 | 537,830 | 60,247 | 19,706 | 175,557 | 66.3 | 181,483 | 143,338 | 106,885 |
| Fort Worth & Denver City | 902 | 4,427,914 | 553,406 | 4,981,358 | 578,851 | 203,270 | 1,678,716 | 71.6 | 1,394,488 | 1,018,580 | 686,288 |
| Columbus & Greenville | 168 | 115,495 | 3,738 | 125,691 | 13,896 | 4,780 | 39,295 | 67.6 | 40,706 | 17,069 | 17,577 |
| Columbus & Greenville | 168 | 878,692 | 44,001 | 978,891 | 143,066 | 45,406 | 356,002 | 83.1 | 165,910 | 44,791 | 56,203 |
| Delaware & Hudson | 846 | 2,143,216 | 59,742 | 2,360,680 | 436,868 | 41,884 | 834,914 | 67.6 | 764,249 | 609,461 | 560,414 |
| Delaware & Hudson | 846 | 20,333,616 | 843,225 | 22,212,176 | 2,386,485 | 430,028 | 7,907,073 | 70.4 | 6,574,652 | 5,034,556 | 4,719,394 |
| Delaware, Lackawanna & Western | 995 | 3,764,073 | 539,345 | 4,805,811 | 285,285 | 111,646 | 1,976,805 | 69.3 | 1,477,793 | 1,025,793 | 1,011,561 |
| Delaware, Lackawanna & Western | 995 | 33,238,820 | 5,374,945 | 43,121,022 | 8,225,506 | 1,115,564 | 19,152,878 | 77.0 | 9,906,299 | 5,456,599 | 5,116,377 |
| Denver & Rio Grande Western | 2,554 | 2,635,708 | 143,223 | 2,893,576 | 275,941 | 82,786 | 958,865 | 80.3 | 1,012,614 | 856,985 | 775,447 |
| Denver & Rio Grande Western | 2,554 | 19,061,717 | 1,283,169 | 21,407,856 | 2,901,846 | 795,810 | 7,644,449 | 63.0 | 4,212,258 | 2,255,037 | 1,579,927 |
| Denver & Salt Lake | 232 | 194,635 | 4,647 | 210,492 | 28,999 | 2,509 | 62,501 | 71.2 | 60,563 | 34,699 | 82,240 |
| Denver & Salt Lake | 232 | 1,691,956 | 57,517 | 1,839,937 | 237,572 | 26,681 | 584,826 | 74.9 | 460,331 | 208,975 | 678,570 |
| Detroit & Mackinac | 242 | 88,597 | 1,706 | 99,585 | 10,107 | 9,764 | 26,675 | 50.7 | 49,144 | 35,624 | 31,621 |
| Detroit & Mackinac | 242 | 591,555 | 21,077 | 688,830 | 119,359 | 114,830 | 241,327 | 74.4 | 176,605 | 141,464 | 100,642 |
| Detroit & Toledo Shore Line | 50 | 308,916 | ..... | 309,973 | 22,869 | 8,537 | 82,437 | 48.5 | 159,535 | 107,181 | 53,824 |
| Detroit & Toledo Shore Line | 50 | 3,046,022 | ..... | 3,058,995 | 245,389 | 86,703 | 800,164 | 47.4 | 1,607,608 | 1,202,005 | 685,547 |
| Detroit, Toledo & Ironton | 472 | 603,697 | 436 | 676,727 | 64,350 | 12,767 | 139,668 | 47.6 | 354,488 | 240,466 | 239,962 |
| Detroit, Toledo & Ironton | 472 | 5,902,962 | 2,353 | 6,085,327 | 649,476 | 122,349 | 1,409,105 | 53.8 | 2,811,716 | 2,017,592 | 1,807,265 |
| Duluth, Missabe & Iron Range | 541 | 3,762,746 | 1,001 | 4,358,790 | 227,417 | 245,581 | 592,844 | 25.3 | 3,257,224 | 2,701,234 | 2,697,983 |
| Duluth, Missabe & Iron Range | 541 | 21,589,080 | 16,836 | 25,117,458 | 1,935,005 | 42,588 | 3,875,404 | 33.8 | 16,639,847 | 12,026,710 | 12,024,517 |
| Duluth, Winnipeg & Pacific | 175 | 125,194 | 870 | 1,237,032 | 34,148 | 19,657 | 51,486 | 85.5 | 243,877 | 145,396 | 9,836 |
| Duluth, Winnipeg & Pacific | 175 | 1,194,416 | 10,289 | 1,237,032 | 255,057 | 2,309 | 485,293 | 80.3 | 243,877 | 145,396 | 6,523 |
| Elgin, Joliet & Eastern | 390 | 1,813,353 | ..... | 1,813,353 | 145,699 | 15,355 | 733,182 | 57.9 | 902,632 | 647,371 | 523,393 |
| Elgin, Joliet & Eastern | 390 | 14,979,032 | ..... | 14,979,032 | 2,956,659 | 149,633 | 6,428,149 | 63.8 | 6,391,670 | 4,675,864 | 3,719,480 |
| Erie | 2,268 | 7,844,020 | 394,284 | 8,783,851 | 1,397,694 | 180,166 | 3,032,542 | 63.6 | 3,199,934 | 2,608,707 | 2,186,892 |
| Erie | 2,268 | 62,545,013 | 3,849,067 | 71,216,573 | 6,493,308 | 1,790,556 | 26,865,005 | 71.6 | 20,207,542 | 14,445,271 | 11,256,275 |
| Florida East Coast | 685 | 530,219 | 115,516 | 744,617 | 125,535 | 25,718 | 257,685 | 84.4 | 116,311 | 46,656 | 12,694 |
| Florida East Coast | 685 | 5,189,684 | 2,700,923 | 8,848,583 | 1,243,427 | 280,940 | 3,094,701 | 78.0 | 1,946,899 | 1,228,949 | 696,394 |
| Georgia Railroad | 329 | 360,827 | 15,912 | 406,344 | 43,533 | 18,781 | 153,755 | 72.2 | 112,998 | 97,463 | 91,064 |
| Georgia Railroad | 329 | 2,957,432 | 147,904 | 3,346,055 | 357,205 | 564,792 | 1,436,490 | 79.9 | 671,179 | 521,546 | 572,338 |
| Georgia & Florida | 408 | 85,346 | 1,587 | 91,001 | 21,142 | 18,206 | 39,295 | 98.4 | 1,446 | —6,875 | —10,100 |
| Georgia & Florida | 408 | 906,053 | 15,008 | 927,341 | 230,791 | 166,523 | 369,004 | 94.7 | 50,875 | 31,782 | 72,275 |
| Grand Trunk Western | 1,029 | 2,074,151 | 58,543 | 2,316,600 | 272,386 | 39,359 | 845,015 | 71.8 | 653,838 | 539,719 | 391,588 |
| Grand Trunk Western | 1,029 | 18,244,501 | 766,718 | 20,406,240 | 2,593,869 | 407,962 | 7,897,487 | 75.9 | 4,921,534 | 3,735,451 | 2,754,910 |
| Canadian National Lines in New England | 172 | 122,062 | 1,685 | 131,382 | 37,603 | 14,425 | 66,361 | 105.2 | —6,801 | —22,896 | —50,394 |
| Canadian National Lines in New England | 172 | 1,168,338 | 301,302 | 1,641,488 | 442,814 | 14,610 | 638,660 | 16.5 | —85,935 | —246,883 | —621,565 |
| Great Northern | 8,069 | 10,487,719 | 301,302 | 11,641,488 | 1,258,749 | 184,211 | 2,905,828 | 53.3 | 5,439,556 | 3,384,243 | 3,140,832 |
| Great Northern | 8,069 | 76,098,341 | 3,490,939 | 86,650,095 | 10,933,924 | 1,960,982 | 24,721,659 | 62.3 | 32,662,186 | 21,841,591 | 20,328,801 |
| Green Bay & Western | 234 | 170,783 | 766 | 181,933 | 42,232 | 16,084 | 58,016 | 70.3 | 55,911 | 17,258 | 25,125 |
| Green Bay & Western | 234 | 1,377,990 | 5,728 | 1,441,706 | 280,830 | 70,850 | 486,887 | 72.7 | 247,534 | 183,624 | 176,413 |
| Gulf & Ship Island | 259 | 133,407 | 14,010 | 157,045 | 27,097 | 2,718 | 70,992 | 79.3 | 32,580 | 14,159 | 9,429 |
| Gulf & Ship Island | 259 | 891,427 | 51,536 | 1,037,011 | 225,253 | 165,990 | 508,801 | 92.9 | 73,463 | —192,450 | —203,017 |
| Gulf, Mobile & Ohio | 1,973 | 1,699,235 | 49,268 | 1,813,000 | 231,306 | 89,111 | 525,434 | 73.1 | 487,183 | 368,182 | 247,108 |
| Gulf, Mobile & Ohio | 1,973 | 14,309,752 | 431,798 | 15,436,743 | 2,498,165 | 855,069 | 5,010,692 | 77.7 | 3,447,652 | 2,304,898 | 1,730,985 |

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1940—CONTINUED

| Name of road | Av. mileage operated during period | Operating revenues | | | Operating expenses | | | Operating ratio | Net from railway operation | Net railway operating income | |
|--|------------------------------------|--------------------|------------|--------------------|--------------------|-------------|-----------|-----------------|----------------------------|------------------------------|-------------|
| | | Freight | Passenger | Total (inc. misc.) | Way and structures | Equip-ment | Traffic | | | 1940 | 1939 |
| Illinois Central | 4,949 | \$8,084,414 | \$749,555 | \$8,833,969 | \$1,046,685 | \$1,850,354 | \$196,323 | 70.1 | \$2,827,021 | \$2,067,063 | \$1,998,279 |
| Yazoo & Mississippi Valley | 1,608 | 67,536,507 | 81,160,316 | 148,696,823 | 9,222,877 | 18,165,508 | 1,985,835 | 77.6 | 18,206,970 | 11,058,182 | 10,516,269 |
| | 1,609 | 11,254,597 | 593,291 | 12,847,888 | 1,215,125 | 1,962,032 | 309,662 | 70.9 | 3,659,970 | 2,262,546 | 1,475,993 |
| Illinois Central System | 6,557 | 9,691,431 | 805,890 | 11,191,181 | 1,171,320 | 2,056,585 | 226,587 | 67.9 | 3,587,075 | 2,682,805 | 2,526,335 |
| Illinois Terminal | 477 | 417,783 | 83,043 | 500,826 | 76,208 | 73,034 | 17,412 | 66.25 | 1,703,963 | 1,200,028 | 960,661 |
| Kansas City Southern | 879 | 1,186,669 | 40,256 | 1,350,031 | 114,538 | 189,486 | 59,391 | 58.2 | 563,795 | 435,795 | 375,575 |
| Kansas, Oklahoma & Gulf | 328 | 10,388,706 | 342,424 | 11,145,663 | 1,050,729 | 1,684,778 | 568,022 | 67.7 | 4,334,471 | 3,452,471 | 2,854,232 |
| | 328 | 1,825,544 | 3,861 | 1,856,572 | 138,678 | 122,475 | 86,798 | 46.0 | 1,001,900 | 778,759 | 607,800 |
| Lake Superior & Ishpeming | 156 | 417,561 | 51 | 505,220 | 29,028 | 25,423 | 604 | 24.7 | 124,997 | 101,573 | 104,302 |
| Lehigh & Hudson River | 156 | 2,642,286 | 551 | 3,199,791 | 274,684 | 259,269 | 6,395 | 33.4 | 1,069,240 | 1,246,243 | 1,257,507 |
| | 96 | 1,397,292 | ..... | 1,405,612 | 163,282 | 230,728 | 33,740 | 65.8 | 430,395 | 318,351 | 210,103 |
| Lehigh & New England | 190 | 408,889 | ..... | 412,317 | 29,758 | 65,066 | 6,818 | 59.1 | 127,124 | 168,756 | 118,324 |
| Lehigh Valley | 1,269 | 3,938,457 | 180,761 | 4,360,026 | 297,312 | 597,559 | 108,161 | 62.9 | 2,323,996 | 1,371,633 | 951,486 |
| | 1,276 | 35,077,172 | 1,701,003 | 39,082,130 | 2,720,951 | 6,614,893 | 1,071,396 | 71.3 | 11,212,416 | 7,970,473 | 5,821,792 |
| Louisiana & Arkansas | 897 | 755,323 | 21,429 | 808,917 | 110,358 | 97,137 | 31,497 | 56.1 | 355,351 | 267,589 | 207,542 |
| Louisville & Nashville | 4,871 | 7,732,339 | 486,326 | 8,751,097 | 902,274 | 2,151,481 | 165,170 | 70.9 | 2,547,073 | 1,469,084 | 1,349,664 |
| | 4,871 | 70,580,928 | 5,279,106 | 80,753,538 | 8,668,814 | 19,710,039 | 1,785,478 | 74.2 | 20,838,655 | 12,602,747 | 13,875,847 |
| Maine Central | 991 | 827,093 | 59,846 | 976,698 | 146,684 | 193,133 | 13,595 | 77.0 | 224,453 | 148,479 | 142,050 |
| Midland Valley | 352 | 118,289 | 4 | 120,298 | 15,347 | 9,420 | 2,599 | 73.8 | 2,646,519 | 1,815,872 | 1,522,751 |
| | 352 | 1,090,352 | 47 | 1,109,098 | 146,497 | 99,563 | 25,897 | 57.5 | 357,327 | 357,327 | 266,991 |
| Minneapolis & St. Louis | 1,512 | 1,115,075 | 5,692 | 1,164,508 | 149,811 | 123,638 | 51,814 | 57.6 | 494,136 | 439,592 | 374,534 |
| Minneapolis, St. Paul & Sault Ste. Marie | 4,271 | 2,833,778 | 51,363 | 3,113,264 | 482,282 | 3,699,281 | 63,299 | 66.7 | 1,038,271 | 1,038,271 | 684,350 |
| | 4,279 | 23,644,004 | 813,944 | 26,345,575 | 3,950,921 | 3,902,580 | 637,649 | 73.1 | 7,077,501 | 5,199,648 | 4,102,593 |
| Duluth, South Shore & Atlantic | 550 | 240,110 | 5,860 | 269,145 | 38,972 | 39,808 | 7,210 | 67.9 | 86,407 | 70,193 | 63,896 |
| Spokane International | 152 | 1,968,350 | 74,188 | 2,236,744 | 450,386 | 350,207 | 67,027 | 78.6 | 478,217 | 331,703 | 289,017 |
| | 152 | 77,018 | 513 | 85,032 | 9,427 | 7,209 | 2,509 | 54.9 | 34,052 | 30,392 | 11,722 |
| Mississippi Central | 150 | 80,947 | 1,786 | 85,708 | 9,495 | 11,024 | 7,545 | 63.7 | 31,135 | 25,605 | 19,443 |
| Missouri & Arkansas | 365 | 114,970 | 1,886 | 122,954 | 27,897 | 13,927 | 7,225 | 76.3 | 29,117 | 21,334 | 8,856 |
| | 365 | 906,301 | 14,467 | 987,342 | 237,873 | 108,831 | 71,395 | 79.3 | 204,513 | 154,662 | 62,743 |
| Missouri-Illinois | 193 | 214,232 | 288 | 215,930 | 30,012 | 22,198 | 3,484 | 54.6 | 97,925 | 44,357 | 26,425 |
| Missouri-Kansas-Texas Lines | 3,293 | 2,215,749 | 181,604 | 2,641,342 | 288,339 | 449,666 | 106,198 | 71.4 | 755,040 | 491,642 | 302,705 |
| | 3,293 | 19,228,046 | 1,659,682 | 23,098,927 | 2,853,399 | 3,911,963 | 1,050,102 | 77.6 | 5,180,316 | 3,197,294 | 1,392,927 |
| Missouri Pacific | 7,151 | 7,552,026 | 428,011 | 8,684,676 | 1,357,450 | 1,456,740 | 244,617 | 70.8 | 2,538,041 | 2,008,990 | 1,571,346 |
| Gulf Coast Lines | 7,148 | 60,569,192 | 4,328,107 | 71,437,699 | 10,927,927 | 13,718,768 | 2,413,520 | 78.1 | 15,624,165 | 10,622,798 | 7,178,495 |
| International Great Northern | 1,155 | 860,837 | 57,084 | 1,043,330 | 160,756 | 166,511 | 29,113 | 78.5 | 224,714 | 162,598 | 92,679 |
| Monongahela | 172 | 307,734 | 4,432 | 310,057 | 37,848 | 29,771 | 503 | 87.6 | 1,161,932 | 532,620 | —90,806 |
| | 172 | 4,171,099 | 5,702 | 4,198,701 | 379,427 | 378,740 | 4,967 | 40.2 | 2,512,549 | 2,012,921 | 1,215,703 |
| Montour | 51 | 199,525 | ..... | 201,112 | 17,912 | 49,684 | 800 | 59.9 | 80,584 | 45,384 | 75,989 |
| | 51 | 1,906,470 | ..... | 1,923,417 | 133,317 | 460,660 | 8,475 | 57.8 | 811,327 | 504,913 | 786,919 |

Continued on second left-hand page



NEW LIMA-BUILT HIGH-SPEED



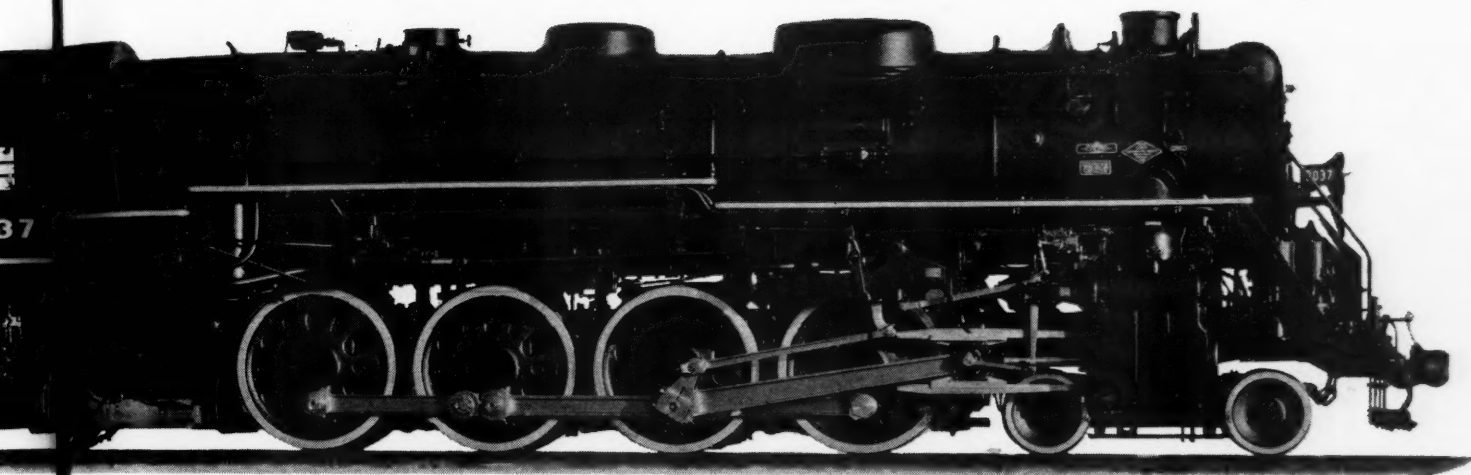
| WEIGHT IN WORKING ORDER, POUNDS | | | | | |
|---------------------------------|------------------|-------------------|----------------|--------------|----------------------------|
| On Drivers | Eng. Truck | Trailer Truck | Total Engine | | Tender Loaded |
| 265,000 | 65,100 | 63,400 | 393,500 | | 2/3 of Capacity 303,933 |
| WHEEL BASE | | | TRACTIVE POWER | | |
| Driving | Engine | Engine and Tender | Main Cylinders | With Booster | |
| 19'-0" | 43'-0" | 98'-0 1/2" | 60,100 lbs. | 74,000 | |
| BOILER | | TENDER CAPACITY | CYLINDERS | | GRATE AREA 75.3 Sq. Ft. |
| Diameter | Pressure | 15,500 gals. | Dia. | Stroke | Driving Wheel Dia. |
| 84 1/4" O. D. at Front | 250 lbs. Sq. In. | 43 tons coal | 25 1/2" | 30" | 69" |



LIMA

ED FREIGHT POWER FOR

NEW YORK
CENTRAL
SYSTEM



The Lima Locomotive Works, Incorporated is delivering 15 high-speed, heavy-duty freight locomotives for use on the main-line of the New York Central. These locomotives have been provided with extra large tenders to assure longer runs and more revenue miles per locomotive hour.

LIMA **LOCOMOTIVE WORKS, INCORPORATED**

LIMA

OHIO

December 7, 1940

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1940—CONTINUED

| Name of road | Av. mileage operated during period | Operating revenues | | | | Operating expenses | | | | Operating ratio | Net from railway operation | Net railway operating income | |
|-------------------------------------|------------------------------------|--------------------|------------|--------------------|-----------------------------------|--------------------|-----------|------------------|-------------|-----------------|----------------------------|------------------------------|------------|
| | | Freight | Passenger | Total (inc. misc.) | Maintenance of way and structures | Equipment | Traffic | Trans- portation | Total | | | 1940 | 1939 |
| Nashville, Chattanooga & St. Louis | 1,111 | \$1,276,987 | \$76,162 | \$1,488,175 | \$167,328 | \$286,827 | \$65,171 | \$557,562 | \$1,131,584 | 76.0 | \$356,591 | \$204,546 | \$324,962 |
| | 10 mos. | 10,440,569 | 928,313 | 12,645,739 | 1,419,351 | 2,461,642 | 664,161 | 5,001,630 | 10,099,176 | 79.9 | 2,546,363 | 1,481,734 | 1,821,049 |
| Nevada Northern | 165 | 558,958 | 7,630 | 612,613 | 82,638 | 27,202 | 12,313 | 103,173 | 275,630 | 45.0 | 336,983 | 218,548 | 167,651 |
| | 10 mos. | 5,589,558 | 76,300 | 6,126,858 | 826,338 | 272,020 | 123,313 | 1,031,173 | 2,756,330 | 45.0 | 3,369,983 | 2,185,548 | 1,677,651 |
| New York Central | 10,984 | 25,651,398 | 4,785,671 | 34,304,738 | 3,748,600 | 7,162,328 | 533,811 | 12,123,044 | 24,843,674 | 72.4 | 9,461,064 | 6,513,393 | 7,064,476 |
| | 10 mos. | 221,390,017 | 48,535,172 | 303,609,180 | 32,685,897 | 63,347,192 | 5,545,080 | 114,815,412 | 228,982,012 | 75.4 | 74,627,168 | 44,965,378 | 49,531,283 |
| Pittsburgh & Lake Erie | 233 | 2,196,168 | 37,521 | 2,290,481 | 173,657 | 811,104 | 26,671 | 611,646 | 1,704,952 | 74.4 | 585,529 | 273,452 | 258,117 |
| | 10 mos. | 18,758,850 | 395,417 | 19,701,428 | 1,561,658 | 6,836,144 | 225,214 | 5,645,081 | 15,102,314 | 76.7 | 4,599,114 | 2,136,566 | 4,534,511 |
| New York, Chicago & St. Louis | 1,704 | 4,258,893 | 84,537 | 4,463,474 | 437,587 | 612,486 | 123,293 | 1,392,112 | 2,694,559 | 60.4 | 1,768,915 | 1,426,355 | 1,524,402 |
| | 10 mos. | 36,132,273 | 686,203 | 37,963,426 | 3,928,145 | 6,126,970 | 1,216,236 | 13,356,320 | 25,851,743 | 66.1 | 12,111,683 | 9,427,423 | 6,498,431 |
| New York, New Haven & Hartford | 1,861 | 5,066,067 | 2,291,112 | 8,164,080 | 950,856 | 1,127,300 | 115,862 | 2,840,004 | 5,430,660 | 66.5 | 2,733,420 | 2,171,420 | 1,521,631 |
| | 10 mos. | 41,059,151 | 21,769,428 | 70,003,131 | 9,064,471 | 11,303,034 | 1,147,221 | 26,585,654 | 51,919,193 | 74.2 | 18,083,938 | 12,601,379 | 6,417,387 |
| New York, Ontario & Western | 21 | 234,301 | ..... | 234,301 | 41,561 | 9,599 | ..... | 33,159 | 86,716 | 34.9 | 161,415 | 118,059 | 131,798 |
| | 10 mos. | 2,007,960 | ..... | 2,007,960 | 344,237 | 68,024 | ..... | 253,258 | 680,167 | 32.1 | 1,437,783 | 1,002,536 | 1,121,054 |
| New York, Susquehanna & Western | 144 | 2,332,888 | 203,624 | 2,688,351 | 228,008 | 255,744 | 23,836 | 1,080,721 | 1,666,464 | 64.1 | 951,887 | 659,172 | 500,749 |
| | 10 mos. | 8,860,303 | 171,684 | 9,291,339 | 993,821 | 1,847,590 | 148,151 | 1,890,506 | 5,083,687 | 54.7 | 4,207,652 | 2,419,682 | 4,719,539 |
| Norfolk & Western | 2,191 | 83,797,644 | 1,681,000 | 87,784,047 | 9,081,873 | 17,215,555 | 1,459,557 | 18,214,041 | 47,931,067 | 54.6 | 39,852,980 | 24,844,121 | 28,013,113 |
| Norfolk Southern | 734 | 427,968 | 3,175 | 442,916 | 71,096 | 51,939 | 25,149 | 146,603 | 315,859 | 71.3 | 127,057 | 93,460 | 66,273 |
| | 10 mos. | 3,593,266 | 37,298 | 3,784,854 | 705,364 | 528,036 | 249,567 | 1,390,491 | 3,089,444 | 81.6 | 695,410 | 366,549 | 372,031 |
| Norfolk Pacific | 6,720 | 6,068,860 | 265,980 | 6,846,104 | 908,164 | 1,322,112 | 156,828 | 2,185,204 | 4,748,097 | 69.4 | 2,098,003 | 1,463,587 | 1,985,629 |
| | 10 mos. | 49,152,624 | 3,237,695 | 56,985,985 | 7,769,649 | 11,390,957 | 1,670,528 | 19,607,323 | 43,172,781 | 75.8 | 13,813,204 | 7,907,578 | 10,666,714 |
| Northwestern Pacific | 352 | 269,556 | 35,281 | 334,638 | 72,346 | 46,512 | 3,147 | 157,749 | 289,453 | 86.5 | 45,185 | 25,390 | 12,566 |
| | 10 mos. | 2,068,211 | 439,407 | 2,761,799 | 660,773 | 480,604 | 31,886 | 1,490,805 | 2,724,885 | 98.7 | 36,914 | 163,276 | 281,867 |
| Oklahoma City & Atoka | 132 | 228,496 | 2,271 | 245,680 | 55,021 | 17,240 | 7,369 | 102,636 | 198,178 | 80.7 | 1,832 | 24,083 | 47,369 |
| Pennsylvania | 10,253 | 35,845,116 | 6,194,678 | 46,203,130 | 5,224,940 | 10,306,857 | 711,731 | 15,013,787 | 32,476,517 | 70.3 | 13,726,613 | 8,385,488 | 7,903,183 |
| | 10 mos. | 299,576,595 | 58,994,463 | 393,392,681 | 40,722,667 | 81,030,968 | 7,335,000 | 137,888,892 | 279,463,352 | 71.0 | 113,929,229 | 71,494,269 | 63,472,630 |
| Long Island | 379 | 779,499 | 1,430,184 | 2,329,092 | 204,186 | 348,614 | 17,027 | 1,020,109 | 1,625,571 | 69.9 | 700,517 | 367,137 | 195,506 |
| | 10 mos. | 6,174,227 | 13,941,267 | 21,237,550 | 2,063,751 | 3,457,951 | 132,070 | 9,617,807 | 15,652,441 | 73.7 | 5,585,109 | 2,276,666 | 916,204 |
| Pennsylvania-Reading Seashore Lines | 411 | 360,645 | 118,912 | 505,093 | 276,920 | 85,995 | 6,254 | 294,710 | 680,140 | 134.7 | 175,047 | 252,090 | 347,694 |
| | 10 mos. | 2,928,275 | 1,970,357 | 5,103,435 | 1,221,900 | 870,047 | 75,511 | 3,038,464 | 5,367,300 | 104.6 | 233,865 | 1,127,868 | 2,071,820 |
| Pere Marquette | 2,114 | 2,858,740 | 63,908 | 3,080,960 | 396,144 | 548,491 | 64,783 | 1,039,470 | 2,142,495 | 69.5 | 938,465 | 656,927 | 531,775 |
| | 10 mos. | 24,793,894 | 794,973 | 27,117,235 | 3,646,870 | 5,453,584 | 648,534 | 9,959,368 | 20,687,584 | 76.3 | 6,429,651 | 4,448,318 | 3,149,050 |
| Pittsburgh & Shawmut | 98 | 88,934 | ..... | 88,934 | 35,044 | 20,710 | 2,221 | 22,118 | 84,241 | 94.3 | 5,054 | 1,192 | 2,163 |
| | 10 mos. | 1,082,034 | ..... | 1,082,034 | 1,221,900 | 870,047 | 75,511 | 3,038,464 | 5,367,300 | 104.6 | 233,865 | 1,127,868 | 2,071,820 |
| Pittsburgh & West Virginia | 136 | 3,321,688 | 595 | 3,484,576 | 605,452 | 793,596 | 175,823 | 769,441 | 2,567,250 | 73.7 | 358,241 | 319,842 | 239,933 |
| | 10 mos. | 33,373,379 | 116 | 35,991,591 | 59,321 | 102,562 | 19,573 | 78,478 | 280,610 | 78.1 | 917,326 | 665,503 | 744,903 |
| Pittsburg, Shawmut & Northern | 190 | 117,063 | ..... | 117,063 | 118,006 | 17,723 | 1,022 | 35,705 | 72,914 | 61.8 | 45,092 | 39,546 | 31,857 |
| | 10 mos. | 997,361 | 28 | 1,004,420 | 143,450 | 168,379 | 10,425 | 319,608 | 697,298 | 69.4 | 307,122 | 254,523 | 174,008 |
| Reading | 1,449 | 5,372,880 | 278,151 | 5,911,850 | 591,914 | 1,181,076 | 73,303 | 2,102,564 | 4,090,940 | 69.2 | 1,820,910 | 1,323,424 | 1,609,419 |
| | 10 mos. | 47,046,519 | 2,564,768 | 51,981,626 | 4,369,834 | 10,290,819 | 704,923 | 19,440,331 | 36,253,076 | 69.7 | 15,728,550 | 11,167,495 | 10,619,253 |
| Richmond, Fredericksburg & Potomac | 118 | 467,420 | 174,249 | 750,477 | 105,352 | 135,599 | 9,022 | 264,410 | 550,883 | 73.4 | 199,594 | 127,961 | 93,252 |
| | 10 mos. | 4,215,187 | 2,512,992 | 6,728,179 | 951,634 | 1,389,334 | 95,754 | 2,916,737 | 5,816,737 | 74.2 | 2,022,860 | 1,358,072 | 763,938 |
| Rutland | 407 | 2,050,680 | 289,581 | 2,968,995 | 371,305 | 612,080 | 106,368 | 1,558,114 | 2,759,782 | 91.7 | 209,213 | 31,057 | 53,398 |
| | 10 mos. | 20,506,680 | 2,895,811 | 29,668,995 | 3,713,005 | 6,120,812 | 1,063,688 | 15,581,114 | 27,597,882 | 89.1 | 120,699 | 39,145 | 202,274 |
| St. Louis-San Francisco | 4,769 | 3,997,843 | 264,947 | 4,633,318 | 548,093 | 935,987 | 113,349 | 1,556,034 | 3,263,375 | 70.4 | 1,369,943 | 1,040,240 | 1,113,874 |
| | 10 mos. | 31,962,532 | 2,592,878 | 37,831,199 | 5,273,193 | 8,634,531 | 863,434 | 14,470,502 | 31,263,737 | 82.6 | 6,567,462 | 3,339,326 | 3,616,557 |
| St. Louis, San Francisco & Texas | 159 | 97,385 | 713 | 103,032 | 24,533 | 12,756 | 49,317 | 99,966 | 990,716 | 97.0 | 3,066 | —5,130 | —28,415 |
| | 10 mos. | 1,056,635 | 6,963 | 1,111,415 | 223,655 | 130,812 | 78,750 | 504,574 | 990,716 | 89.1 | 120,699 | 39,145 | 202,274 |
| St. Louis Southwestern Lines | 1,649 | 1,954,196 | 65,077 | 2,100,912 | 339,217 | 359,143 | 83,611 | 554,473 | 1,431,151 | 67.6 | 679,761 | 562,851 | 455,385 |
| | 10 mos. | 15,821,039 | 314,699 | 16,822,910 | 2,811,109 | 2,670,129 | 831,700 | 5,123,262 | 12,233,078 | 72.8 | 4,579,832 | 3,462,633 | 2,180,148 |

Continued on next left-hand page

739,709
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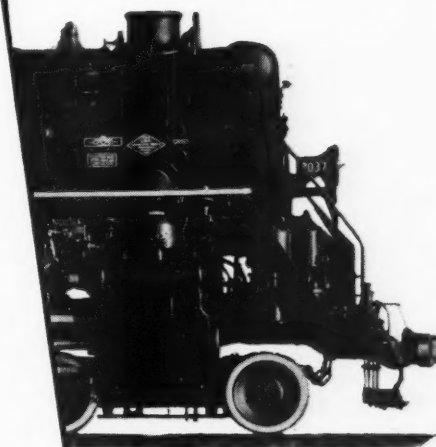
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122 S. Michigan Ave. CHICAGO

Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

REVENUES AND EXPENSES OF RAILWAYS MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1940—CONTINUED

| Name of road | Av. mileage operated during period | Operating revenues | | | | Operating expenses | | | Operating ratio | Net from railway operation | Net railway operating income | |
|---|------------------------------------|--------------------|------------------------|-------------|-----------------------------------|--------------------|-----------|---------------|-----------------|----------------------------|------------------------------|------------|
| | | Freight | Passenger (inc. misc.) | Total | Maintenance of way and structures | Equip-ment | Traffic | Trans-portion | | | 1940 | 1939 |
| Seaboard Air Line | 4,314 | \$3,297,712 | \$444,128 | \$4,182,007 | \$585,803 | \$847,647 | \$177,720 | \$1,470,229 | 78.3 | \$909,329 | \$558,400 | \$483,967 |
| | 10 mos. | 29,329,189 | 3,138,438 | 32,467,627 | 5,954,514 | 7,920,581 | 1,746,503 | 14,730,209 | 83.0 | 3,774,200 | 2,768,002 | 2,193,040 |
| Southern Railway | 4,314 | 8,694,449 | 740,107 | 10,206,263 | 1,162,304 | 3,614,946 | 163,335 | 3,189,134 | 63.4 | 3,739,665 | 2,656,699 | 2,919,821 |
| | 10 mos. | 72,276,932 | 7,427,516 | 86,294,509 | 11,308,303 | 14,864,260 | 1,644,485 | 29,467,811 | 70.2 | 25,705,993 | 16,119,529 | 16,249,128 |
| Alabama Great Southern | 315 | 698,508 | 51,477 | 797,785 | 95,359 | 148,426 | 16,930 | 229,796 | 64.6 | 282,790 | 165,872 | 215,659 |
| | 10 mos. | 5,821,295 | 520,642 | 6,764,539 | 889,827 | 1,380,445 | 137,866 | 4,574,226 | 67.6 | 2,190,330 | 1,345,508 | 1,458,445 |
| Cincinnati, New Orleans & Texas Pacific | 337 | 1,456,898 | 122,171 | 1,665,911 | 186,004 | 341,711 | 30,961 | 390,906 | 60.1 | 664,092 | 441,108 | 618,227 |
| | 10 mos. | 13,285,002 | 1,029,011 | 15,143,813 | 1,737,527 | 2,939,234 | 300,762 | 9,397,195 | 62.1 | 5,746,618 | 3,900,929 | 4,173,148 |
| New Orleans & Northeastern | 398 | 200,501 | 21,390 | 249,501 | 35,612 | 41,503 | 2,210 | 92,518 | 71.8 | 70,299 | 52,914 | 30,463 |
| | 10 mos. | 1,537,114 | 390,078 | 2,124,413 | 357,970 | 379,145 | 15,083 | 869,606 | 80.4 | 416,408 | 254,975 | 130,224 |
| Georgia Southern & Florida | 204 | 299,102 | 20,022 | 344,315 | 40,124 | 36,780 | 7,626 | 95,626 | 56.5 | 148,501 | 96,608 | 73,866 |
| | 10 mos. | 2,326,368 | 185,974 | 2,698,049 | 376,700 | 352,220 | 59,384 | 799,617 | 63.5 | 985,282 | 647,541 | 418,228 |
| Southern Pacific | 8,623 | 14,680,174 | 1,568,747 | 17,480,293 | 1,457,232 | 2,467,314 | 346,166 | 6,040,387 | 63.7 | 6,343,068 | 5,276,175 | 4,378,952 |
| | 10 mos. | 115,585,369 | 17,121,942 | 144,270,197 | 14,376,224 | 24,872,169 | 3,740,276 | 53,043,274 | 72.5 | 39,683,813 | 27,787,336 | 19,661,284 |
| Southern Pacific Steamship Lines | ... | 742,793 | 41,721 | 815,565 | 40,861 | 105,787 | 186,475 | 5,524,191 | 99.1 | 535,511 | 7,062 | 24,858 |
| | 10 mos. | 6,940,449 | 349,542 | 7,639,092 | 201,733 | 1,055,201 | 186,475 | 5,524,191 | 93.0 | 535,511 | 285,678 | 277,029 |
| Texas & New Orleans | 4,417 | 3,737,033 | 301,364 | 4,376,256 | 547,282 | 691,528 | 125,123 | 1,373,007 | 67.1 | 1,439,107 | 1,141,113 | 913,232 |
| | 10 mos. | 31,419,427 | 2,963,834 | 37,367,127 | 5,708,608 | 6,401,687 | 1,243,545 | 12,732,148 | 73.5 | 9,244,104 | 6,187,957 | 3,762,534 |
| Spokane, Portland & Seattle | 948 | 904,377 | 26,002 | 993,641 | 85,423 | 102,307 | 1,346 | 294,243 | 60.1 | 390,517 | 314,717 | 241,068 |
| | 10 mos. | 7,032,963 | 332,489 | 7,958,957 | 1,743,557 | 858,978 | 108,618 | 2,690,078 | 71.5 | 2,269,085 | 1,512,145 | 945,431 |
| Tennessee Central | 286 | 212,028 | 4,084 | 231,566 | 33,710 | 31,806 | 6,890 | 76,062 | 68.3 | 73,307 | 56,601 | 41,881 |
| | 10 mos. | 1,983,283 | 48,147 | 2,166,356 | 402,624 | 335,684 | 70,051 | 739,436 | 76.9 | 519,613 | 388,335 | 242,216 |
| Texas & Pacific | 1,887 | 2,053,424 | 185,805 | 2,511,540 | 266,790 | 502,303 | 76,056 | 723,307 | 68.9 | 831,051 | 673,580 | 626,111 |
| | 10 mos. | 17,913,397 | 1,899,872 | 21,793,319 | 2,567,863 | 4,056,471 | 746,725 | 6,925,301 | 70.8 | 6,359,552 | 4,828,855 | 3,954,632 |
| Texas Mexican | 162 | 101,925 | 212 | 116,727 | 15,762 | 14,764 | 3,190 | 31,145 | 62.9 | 43,252 | 37,074 | 30,656 |
| | 10 mos. | 660,008 | 3,121 | 797,080 | 120,049 | 99,932 | 31,194 | 310,818 | 78.2 | 174,006 | 114,774 | 80,367 |
| Toledo, Peoria & Western | 239 | 224,991 | 59 | 1,979,201 | 390,875 | 147,198 | 175,451 | 445,531 | 54.2 | 104,914 | 65,740 | 45,240 |
| | 10 mos. | 1,947,947 | 59 | 1,979,201 | 390,875 | 147,198 | 175,451 | 445,531 | 64.9 | 694,661 | 442,939 | 282,534 |
| Union Pacific System | 9,907 | 14,927,962 | 1,401,578 | 17,617,093 | 2,687,047 | 3,228,821 | 366,861 | 5,365,417 | 70.4 | 5,211,769 | 4,156,468 | 3,056,557 |
| | 10 mos. | 110,936,634 | 14,621,540 | 137,098,938 | 15,899,308 | 27,577,318 | 4,101,802 | 46,387,145 | 74.0 | 35,653,835 | 23,189,113 | 15,560,748 |
| Utah | 111 | 80,260 | ..... | 665,368 | 94,633 | 243,384 | 4,383 | 183,511 | 80.9 | 15,360 | 4,254 | 5,672 |
| | 10 mos. | 664,224 | ..... | 665,368 | 94,633 | 243,384 | 4,383 | 183,511 | 85.5 | 96,755 | 6,435 | 32,691 |
| Virginian | 639 | 2,201,537 | 2,598 | 2,260,765 | 295,140 | 410,593 | 25,437 | 329,406 | 48.1 | 1,173,400 | 598,400 | 648,803 |
| | 10 mos. | 20,665,322 | 28,915 | 21,201,833 | 2,003,249 | 3,927,802 | 246,844 | 3,055,350 | 45.0 | 11,665,732 | 7,565,732 | 8,116,791 |
| Wabash | 2,409 | 3,913,610 | 210,103 | 4,432,911 | 484,259 | 563,775 | 1,490,130 | 14,872,051 | 65.6 | 1,525,469 | 1,276,294 | 953,846 |
| | 10 mos. | 33,179,412 | 1,998,931 | 37,927,606 | 5,115,399 | 6,134,399 | 1,490,130 | 14,872,051 | 76.9 | 8,763,447 | 6,414,970 | 3,028,595 |
| Ann Arbor | 294 | 351,201 | 4,743 | 365,382 | 28,935 | 64,383 | 13,481 | 151,237 | 74.0 | 94,837 | 70,175 | 57,203 |
| | 10 mos. | 3,294,435 | 24,472 | 3,435,783 | 328,437 | 693,071 | 135,830 | 1,465,110 | 80.0 | 688,183 | 452,829 | 317,789 |
| Western Maryland | 859 | 15,042,950 | 69,605 | 15,649,679 | 2,024,720 | 3,062,309 | 398,470 | 4,006,426 | 65.8 | 579,861 | 439,861 | 441,209 |
| | 10 mos. | 150,429,500 | 696,050 | 156,496,000 | 20,247,200 | 30,623,090 | 3,984,700 | 40,064,226 | 65.3 | 5,425,788 | 4,215,788 | 4,265,927 |
| Western Pacific | 1,196 | 2,149,773 | 49,089 | 2,229,468 | 216,470 | 828,793 | 61,251 | 679,123 | 55.7 | 988,350 | 896,831 | 750,150 |
| | 10 mos. | 14,177,752 | 519,688 | 14,993,348 | 2,376,885 | 2,981,122 | 625,454 | 5,476,720 | 76.1 | 3,582,423 | 2,709,596 | 1,778,126 |
| Wheeling & Lake Erie | 507 | 1,537,506 | 1 | 1,649,333 | 238,349 | 373,340 | 364,782 | 4,156,165 | 65.4 | 4,968,801 | 2,891,463 | 3,794,830 |
| | 10 mos. | 13,550,002 | 38 | 14,304,031 | 1,736,553 | 2,553,639 | 364,782 | 4,156,165 | 65.3 | 9,355,230 | 5,981,463 | 3,239,358 |